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ABSTRACT

This book contains proceedings of a colloquium convened to discuss the reform of medical education, specifically student pressures for such reform. The participants included students and faculty from 11 countries. Papers were presented and followed by panel discussions. The topics covered reviews and analyses of medical education in Latin America, France and Japan; the organization of new medical schools in Germany and New Zealand; student attitudes toward and participation in medical school reform; relationships of the social security administration (in France) and the biomedical research community (in Belgium) to reorganized university medical schools; and Britain's and Columbia's responses to pressures for change in medical education. (JS)

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FOGARTY INTERNATIONAL CENTER PROCEEDINGS #1

REFORM OF MEDICAL EDUCATION

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The Effect of Student Unrest

A COLLOQUIUM SPONSORED BY THE
John E. Fogarty International Center
for Advanced Study in the Health Sciences,
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JULIUS R. KREVANS, PETER G. CONDLIFFE
Editors

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PREFACE

The reform of medical education is much discussed these days. While the subject forms part of the general problem of how the university is to relate to the society that supports it, the medical school, more than any other faculty, must be especially sensitive to social issues, dealing as it does with life and death, the health of people, the care of the sick, and the development of our children, to say nothing of their birth.

The young men and women who come to the medical faculty for their education are, as a group, more idealistic than any other set of students. Although the present educational process is said to make cynics of them in the end, when they begin their medical studies, at least, they are inspired by an impulse as old as society—to heal and to care for the sick. Today it is fashionable to decry such idealism, to seek psychological motivation of a less altruistic variety as the reason for going to medical school. Such cynicism we reject.

In organizing this colloquium, we thought that the students had something to tell us, for all their inexperience and their lack of practical plans for organizing the future.

In collaboration with the Board on Medicine of the National Academy of Sciences, the John E. Fogarty International Center invited a group of students and faculty from eleven countries to discuss the problem. We chose to make this an international group, for problems were apparent in many countries. These proceedings, we feel, speak for themselves as to the views of some students and faculty about what is wrong with existing systems of medical education. We hope that by editing them lightly, we have retained the flavor of the discussion and the freshness of expression that characterized the two and a half days of the colloquium. Where thoughts are obscure, we think the intelligent and perceptive

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reader will deduce, as we did, that the problem is obscure and needs illumination.

The choice of the subject was no accident. For the past two decades, the National Institutes of Health has grown from a small government laboratory into the biggest medical research institution in the world. In its own laboratories at Bethesda, and elsewhere, and through its support of medical schools and university departments throughout the United States and in many countries overseas, the NIH has had a major impact on biomedical research and, thereby, on medical education. The administrative staff of NIH has of necessity become deeply involved with medical school and university faculties. Through the review committees and councils of the NIH, the medical schools have acquired a real insight into, and not inconsiderable influence on, the formulation of policy and the disposition of monies for research. Without federal aid to biomedical research, funneled principally through the NIH, the United States would not be the leader in this field, and the world would be the poorer.

The rise of student pressures for reform has come at the end of two decades of unparalleled expansion of staff and facilities for biomedical research. Perhaps it is no accident that the first effective reactions to this expansion should have come from the students. The students have, in a sense, been most affected by the emphasis upon academic medicine and research that has altered the environment in which medical education is dispensed. Their objections to things as they are should be examined in order to sort out the questions at issue.

Are their complaints aimed at research as such, or is it primarily the health care system with which they are concerned? What ought to be the relationship between research and the training of a student destined for a life as a practitioner? What are the responsibilities of the university for the solutions to society's health needs?

We have sought at this colloquium to examine some of these questions.

JULIUS R. KREVANS
PETER G. CONDLIFFE
Editors

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REFORM OF MEDICAL EDUCATION

The Effect of Student Unrest

Milo D. Leavitt, Jr.

WELCOMING REMARKS

It is an honor for me to welcome this group of distinguished colleagues from the United States and abroad in behalf of the National Academy of Sciences and its Board on Medicine, as well as the Fogarty International Center. It is a great pleasure to have you here, and we are delighted that you have been able to join us on this occasion.

In welcoming a group of medical educators and medical students to the Fogarty International Center, I believe it would be entirely appropriate for me to explain our aims and the programs we are setting up to pursue these aims.

Why is it that the first conference convened in the International Center has as its theme reform in medical education? As a major institution devoted to research, the National Institutes of Health has recognized for years that research and education are inseparable entities. We have always sought to expand our biomedical research and teaching community with the full knowledge that medical advance depends upon fresh minds, well schooled in science and medicine.

Last year, the National Institutes of Health underwent a reorganization which brought to the Bethesda campus the Bureau of Health Manpower as well as the National Library of Medicine. Therefore, as members of the NIH staff, we feel we have a real stake in medical education.

The Fogarty International Center is described in its title as a "Center for Advanced Study in the Health Sciences." Because of the urgency of the problems that now confront medical educators

throughout the world, the staff of the Center and our International Advisory Committee decided that the question of educational reform in the teaching of medicine and the health sciences should be pursued as one of our major themes for advanced study.

Other countries have long faced this problem in acute form, namely, a reduction in resources in the face of increased demand, so that we in the United States feel we have a great deal to learn from our colleagues from abroad. We deliberately chose to hear about student pressures, because so much of the stimulus for reform and reorganization has been generated by student action.

In particular, we hope that the common thread of purpose in the student movement will be clearer to some of us who bear the responsibility for the allocation of resources at a time when the competing demands upon these resources are so great.

Conversely, we hope that open discussion of the issues, as seen in different countries, will help us develop new approaches in determining priorities to meet the demands that are now welling up from the students in our medical schools.

The Fogarty Center is proposing to study this reform from several standpoints. First, we wish to understand the reason for the present dissatisfaction; second, in the near future we will examine the effects of reform and change upon the future of research in medicine; third, we think it is important to examine the future relationships between health care services and the reform; fourth, and this relates to my last point, how can we find additional funds to pay for what will inevitably be a very expensive system of medical education?

Thus, our ability to mount conferences will be a means to an end. Other themes we shall follow fall generally within the title "Implications of Advanced Biomedical Research for Society." Here, we shall deal with such matters as legal problems that can arise, for example, out of the advances in human genetics.

Much of our conference activity will be in collaboration with constituent institutes of the National Institutes of Health, along themes which are of mutual interest and which may involve us with ethical, legal, economic, and other problems in the future.

This brings me to another new program of the Center, namely, the Scholars-in-Residence Program. We will be able to bring scientists and other scholars of distinction to Bethesda to take up resi-

dence in the Center for varying periods, from three months to three years, if necessary. These men and women will be free to pursue their own research interests. They will be able to write, talk to scientists, confer with legislators here on the Washington scene, take advantage of the numerous institutions, such as the National Library of Medicine, that are available in this area. The choice of scholars will be governed eventually by our own program interests, and these are in medical education, the social implications of research, and, of course, international medical research and health programs.

In closing, may I again express our gratitude for your willingness to join us in this conference. None of us expect that we are going to solve the many problems which now confront medical education in the short span of less than three days, but we do hope there will be a free expression of views and that new ideas and approaches will emerge.

I would also hope that perhaps this forum might give rise to a number of recommendations that would be useful to us in the Fogarty International Center for our future programs in these specific areas of interest. Thank you.

Julius R. Krevans

CHAIRMAN'S OPENING REMARKS

I should like to add to Dr. Leavitt's opening remarks a few bread-and-butter comments about how the conference will be run and how it was put together.

When I am invited to a conference, I always go through the turmoil of wondering what I am doing there and how did my name get on that list. I suspect some of you have wondered about the same thing. There is no systematic Machiavellian scheme behind the choice of the people who are here. Dr. Condliffe and I, with the advice of others, made no pretense of trying to get representative individuals. We snooped and asked embarrassing questions and tried to choose people who weren't speaking for anyone except themselves, but who had a record of speaking out and having something interesting to say.

As Dr. Leavitt implied, what we are trying to get out of these two and a half days is not what the future of medical education will look like, not specific curricula revisions, but to begin to look at what kind of forces play a role in changing concepts in medical education and to look at one that is particularly timely.

I think one of the mistakes which is so apparent is the fact that one sometimes separates medical educators and students. I think that is one of the reforms that is obviously imminent. The students are certainly medical educators. But what we would like to do in these two and a half days is to exchange ideas, to focus down on this problem of what sort of efforts the students are making. Why are they making them? What are the effects of these efforts on medical education?

We have deliberately chosen not to bring together students and faculty members from situations that are identical to try to point out and to learn where there is a common thread among student problems and unrest. Equally important, we need to find out when there is no common thread and where the forces operating are different. One ought not to draw conclusions from experiences which are so different in one country that they have no application to the problems of students and of medical education in another.

I should like also to say something to those of you who may not know about the origin of the name of this Center, the Fogarty Center. This is not named after a discoverer of some basic science protein or for a great clinician or for a great medical educator. It is named for a congressman who possibly worked more effectively than any of the people in medical education or medical research for improvements in health. I suspect that any dispassionate survey of what good has been done for medicine in the last decade in the United States by any of the people working in the health field would certainly include the late Representative John E. Fogarty, either first or second, but not much further from the top than that.

In the course of the program, we have left room for some discussion following each small group of papers. We frankly hope that we won't range outside the topics presented, that this discussion early in the program will be of the presentations only and not of the entire subject. We have left ample time for free and widely-swinging discussions later on in the program and I would like people, at least in the earlier discussions, to limit their remarks basically to the papers presented. We hope that the people who are presenting the papers will keep in mind that there are certain constraints of time. Other than that, we would like to be very informal.

If there are no questions, I should like to begin the session by asking Dr. Chiappo to present a paper dealing with review and analysis of the problems in medical education in Latin America.

Leopoldo Chiappo

REVIEW AND ANALYSIS OF PROBLEMS IN MEDICAL EDUCATION IN LATIN AMERICA

Mr. Chairman, friends, I am going to focus my attention on student unrest and medical education in Latin America.

1. Our questions are these: In the context of a developing socio-economic structure or underdeveloped society—there is the question to decide if we are the underdeveloped society or developing society. If we are optimists, we will say developing society, but we are realistic. We will hesitate between the concept of underdeveloped or underdeveloping society.

In this context, I should like to ask this question of myself: What have been the trends and meaning of student unrest? What are the relations between student unrest and the needs for a deep change in the philosophy and orientation of higher education and medical training in order to offer a positive and constructive solution of nonconformist attitudes of the students? What kind of physicians are we preparing? What kind of physicians does our society require? Doesn't it happen to be that the kind of professionals we have been preparing is just the kind that we don't need? Can we sit down and say everything is wonderful; we are doing fine; our medical education is facing adequately the problems of our social situation; progress is guaranteed and, in the near future, things are going to be better if we continue our present predominant patterns in higher and medical education? What's wrong? Why? What are we doing? What must we do? These are our questions.

2. Since the very beginning—1903, 1908, 1918—student unrest in Latin America was related to these points:

a. Students claimed the right to be associated. The federations were born with national and international implications. The pattern has always been a defensive union model. Against whom? Why?

b. The aims of these associations are not only related to the betterment of the university system and educational reforms but involve workers' and peasants' interests in a revolutionary process. In 1918, in the well-known Manifesto of Cordova (Argentina) students wrote: "We are conducting a revolution, we are experiencing American historical hours."

c. Students wanted to participate in the decision-making process. *Cogobierno* is the name in Spanish; cogovernment, as a premise for any possibility of change in the university and in society. Cogovernment is not a potential to share the responsibilities of administration. It is a part of changing the university and society. The struggle against faculty oligarchy inside is the same struggle against oligarchy outside the university.

d. Student complaints were against any kind of authoritarian style and the correlated dogmatism in teaching. They asked not only for *cogobierno,* but for the "right of scratch out" of faculty members. This is very important.

e. Students represented a strong pressure to open the doors of the university to larger groups of society. Before 1918 our universities were very narrow and reserved only for very small numbers of people; it was a classic university. They spoke of "popularization of education," no admission examinations, and no tuition for higher education.

f. University reform and student unrest represented a progressive awareness of the injustices of the socioeconomic structures and protest against any sort of domination, internal or external.

3. The most striking patterns of behavior developed through the *reforma universitaria* and could be described as replevining attitudes, which have a deep psychological meaning of frustration, which involve feelings and needs of recovering something of which they have been deprived. Very interesting! All the students say, "The students have been conquered. We have been deprived. We need to have again something that somebody takes from us, reclaiming it." As an attempt at interpretation, it is possible to design this scheme to approach this problem:

a. The only way to escape from a dominated position in society and share the benefits of a privileged minority is by means of a sort of magic tool that represents the professional titles or academic grades, which replaced colonial titles of nobility. Learning is not so important as the title itself that has been converted into a defensive weapon in the struggle. This is interesting. When we are going to assess medical education, reforms and everything, it is intelligent to think about the meaning of a title in a society where 7 percent of the population owns 70 percent of the total gross national product. Learning is not so important. The title is important. Without a title you are nothing. This is commonly said. And youth is anxious to find its place in the sun. What is really important is to become a doctor, not as a service to the community and a relation to real social needs, but just as prestige. The key to success is to avoid a feeling of inferiority. Higher education has stressed this individual pattern, and medical education has not emphasized enough the urgent need to change motivations for medical careers.

b. The replevining attitude is also a reflection of the effects of the instability of the family and the male predominance standards (so-called *machismo*) and could be observed as a sort of a psychodynamical projection of a suffering mother and prepotency of the father that has been transferred to what could be called the "messianic complex."

I observe the student leaders. I think that many of them are very bright and have a very clear awareness of the real situation of the country, but many of them project their own family situation that is very widespread in our societies, instability of the family and the messianic complex, the complex to save something, to be interpreted as an irrational reaction to any kind of authority which is the symbol of the frustrated father and the strong need to redeem people from oppression, the symbol of the suffering, frustrated mother.

Regarding the instability of the family, I am not speaking about the affluent families in Latin America. I am speaking about the low- and middle-class that claim many of these leaders.

c. This is not an accusation, just a description. The frequent oscillations from tyrannies to permissive democratic systems in Latin American political life produce this replevining, or revenge,

attitude in the students' demands that they call student conquests. As soon as this is reached in a very permissive democratic system, then comes a military change, tyrannic or oppressive system, and they are withdrawn. This conquest, the feeling of something stolen from them, is present each time in their dynamics of protest. One explanation is the oscillation between tyrannies to permissive, democratic systems and tyrannies in the political life.

4. The results of medical education are far from meeting social demands. We observe a distortion in the product of medical education, the physician and the allied health personnel.

a. Bad distribution of physicians. They concentrate in the most populated urban areas. Meanwhile there is a tremendous lack of medical care for most of the inhabitants of the country. The physicians are not prepared to act as promoters of the community. In many Latin American countries concentrations of population of under 10,000 inhabitants represent 70 percent of the total population, and they don't have any kind of medical care. In spite of that, we are able to see the picture of an increasing number of physicians in the cities involved in occupations that are not the medical profession. There is no medical care in the small towns and rural areas where it is badly needed and the brain drain phenomenon also exists.

We ask, what kind of medical education are we providing which causes this to happen? Really, we need a complete revolution in the content of curricula, procedures, and aims. Revolution to put the feet on the ground and the head up, because we are in just the reverse—in the inverse position. That means education that is realistic, with the feet on the ground and with the strong ideals at the same time. But the hedonistic and utilitarian motivation, with total lack of commitment toward demands of concrete social realities, is the spirit—or lack of spirit—of medical education.

b. Lack of allied health personnel. This is related to a hypertrophy in the level of aspirations. The nurses want to be doctors, and the doctors superdoctors, and so on.

c. Low, very low, amazingly low performance is very frequently found in physicians whose professional output is 2.4 patients per physician hour.

d. Physicians are prepared as a machine for treatment of machines, isolated from social background. There is a predominance

of treatment of diseases as the main responsibility, instead of the concept of medical care of the social community. This broad approach has recently developed in a new school of medicine, which has an acute sense of responsibility and of commitment to that social community.

e. The concept that in the problem of health a complex of social variables emerges is something which needs to be spread in Latin America when we observe that the incidence of pathology is strongly associated with the socioeconomically undeveloped structure. We can't continue playing the flute or the lyre or the small harp and doing research in very sophisticated diseases and preparing predominantly the corresponding kinds of physicians while the surrounding areas are on fire. We need more firemen than flute players or small harp players.

5. Given all these situations I should like to ask, what is more dangerous, student unrest or faculty *rest*? It is my deep conviction that this Colloquium will be a demonstration, an intellectual demonstration, of the faculty *rest*.

Thank you.

DISCUSSION

Julius R. Krevans, presiding

KREVANS: I spent three months in Lima while Dr. Chiappo made believe he couldn't speak English and tortured me by making me speak Spanish, for which I will get revenge.

The paper is open for discussion, questions, or enlargement.

BOSCH: My name is Samuel Bosch. I come from Argentina. I am now at Mount Sinai School of Medicine, New York. I am one of those who have been invited and have asked myself: Why? I presume it is because I still consider myself a student, and have been trying to change the situation of medical education in my country by experimenting in new models for providing health services. I thought that this was a practical way of responding to the need for reform in my country.

When I received Dr. Condliffe's telephone call, I was attending, at that moment, a course in medical education at the University of Illinois. While reading about this subject, I have tried to pick out the differences between what is happening in South America versus what is happening in North America.

In Seymour Lipset's book *Elites in Latin America* there is a very interesting chapter by Luis Scherz Garcia, a Chilean sociologist. I should like, very briefly, to tell you the three stages he sees in the evolution of education and how I see this fits into what is happening in student unrest in the southern part of the hemisphere and what is happening up here. He mentions three phases: a *static phase,* a *critical phase,* and what he calls a *dynamic phase* of university evolution. What the students are protesting about is probably very similar everywhere, but it is happening at different phases of the evolution. Oversimplifying, Luis Scherz Garcia describes the static phase as a period where the professors combine part-time teaching in the university with the exercise of their professions. They are not so interested in what is happening to society, but mainly in their own professional lives and offices. This is, to a great extent, still happening in our countries. The critical phase is a period of transition. Professors are employed for full-time activity as well as part-time activity. This is certainly a beginning effort in some of our countries facing a great deal of difficulty. The third phase is the more research-oriented period with institutional dualism and many professors on full-time activities. This happens here. Some professors are entirely dedicated to research and more or less isolated from teaching. In every stage the learner, at any rate, seems to be forgotten.

When I speak to a student of the United States, or attend a meeting of the Student American Medical Association, I hear a great deal of talk about revolution. This happens in very sophisticated terms and with many opportunities for communication with their full-time professors. They may burst into the offices of the full-time dean, but there is the possibility of a dialogue. This matter is arousing scientific curiosity, as exemplified by this kind of meeting. When you see unrest in our countries, still at the static stage, it frequently takes the very dangerous form of revolution.

Thank you.

KREVANS: Are there other comments or questions?

LLOYD: I am Geoff Lloyd, President of the British Medical Students Association, London. I enjoyed Dr. Chiappo's lecture very much, and there are a large number of points he raised which I have heard so many times before, because I am in frequent correspondence with Uruguayan students who are having probably even more problems at the moment in this repect. Two things came up which are terribly important.

One is motivation. There is no doubt that the students in Dr. Chiappo's country are very, very concerned about motivation. They should be more so in our country. You have to try to select a student who has the right motives for going into medicine. We are now beginning to get students into medicine in our country who, I think, are not motivated correctly in that they don't primarily wish to serve the community. The students who don't

wish to serve but wish to undertake some form of esoteric training can usually be found in some niche at the moment; but if their numbers increase, we are going to get a form of medical service in our country which I think will be very inferior to the present one.

The other point concerned the sort of training which Dr. Chiappo's particular country requires. In our country, we are moving away from what we call vocational training—which is fitting a man to do a job—into the more esoteric realms of educating a man to learn how to become a doctor.

I really would like to stress the point that in a particular environment, you have to have an educational objective which is suitable to that environment.

In a developing country—and I like to think of them as developing countries—I think you need to fit a man to do a job. In an area such as North America, you no longer really need to fit the man to do the job. You probably need to educate him fully and then allow him to learn himself.

Therefore, the society will very much determine the sort of education required. This is one of the differences which will come out in this sort of colloquium. Thank you.

KREVANS: Other comments or questions?

ZELTER: I am a student in France, and I think that both kinds of medical education ought to be found in the same country.

Obviously, there are students who have very particular interests in medicine and know what they want right from the beginning. Those certainly are not to be educated in such a way as to fit a job. They know what they want to do and have to find their way themselves.

The others, who, I think, are the most numerous in medical schools, just study medicine because it is a kind of way to increase their social status in the society in which they live—or to get some sort of life insurance—because medicine in all countries is a job where there is no employment problem at all. As long as you can manage to go through the medical curriculum, you know that you will be able to carry on for a lifetime. There is no doubt or accident about this.

So I think that ideally, if there was ever an ideal medical education, which I doubt very much, it should provide ways for these two types of students. I don't think we have to go one way or the other. I think it would be wrong to do so and dangerous, too.

KREVANS: Professor Pfeiffer, did you wish to say something?

PFEIFFER: I should like to address Mr. Lloyd. What do you think of the criteria for selecting the students of medicine in relation to the fact that there are about 35 to 40 different branches of medicine?

LLOYD: The important thing, I think—and this is something which we are pressing for in our country at the moment—is that we widen our selection bases. At the moment in our country, we select those who have passed certain scientific tests. It is a very rigid selection procedure, and it is selecting a particular type of candidate. Not only that, it is forcing a particular individual to become a particular type of candidate before he can go into medical school, which is very wrong.

A liberal arts man has a part to play in medicine. He is a different personality, and we need many different types of personalities in medicine.

I think that selection procedures merit more study. I can't give you the answer as to how we should select our students, because we don't know, and this is one of our problems in the future—we have to try to work out objective and subjective information which is available at the time a candidate comes up to medical school and try to relate this to how successful a physician he eventually becomes.

When you have data of this sort, you then will be able to give to the selection committees or the computer, whichever it happens to be, the details that will help them to select the sort of student who will become a very successful physician.

YU: I should like to comment on Geoff's point. I think it is a good point. Geoff suggested that the problem of not getting the type of doctor needed to serve society is because we are not selecting the right type of person to attend medical school in the first place.

I should like to bring in another idea: Whether or not you select the type of person who says he wants to be a doctor in the Albert Schweitzer image, and then you put him in a stifling medical school environment. You watch him as he goes through the four years of medical school. He enters as a freshman with attitudes of idealism and concern for his fellow man, and he leaves—cynical, stale, and concerned mainly about his future salary. Somewhere along the line in this process of what we call medical education, this change of attitude comes about. Dr. Chiappo mentioned one part of it—the treatment of a disease instead of an individual patient.

Many of the physicians on medical faculties are only interested in the disease. They see patients only as it applies to their own particular field of research. And physicians on the faculty really serve as models for the medical student. It is not the William Osler of the past American medical tradition that students see, but it is a research scientist interested in heart transplants and metabolic genetics.

In a university environment, you use the patient as a teaching tool, often with no concern for the patient as a person.

I am a junior medical student. When I entered medical school, no student talked about money. That was one subject I never heard much about.

As a senior medical student, one thing that we are more and more concerned about is the length of time we have spent in medical school and how we are going to go out and make up for it financially. Financial motives have not only crept in, but perhaps have become the major source of our incentive.

KREVANS: I think that this is a topic we should pursue in much greater depth. I submit that students are as inhuman as the faculty. But that is getting away from our topic this morning, and perhaps we could come back to it later.

We should like to go on to the next paper on this morning's program—a review and analysis of medical education in France by Dr. Escoffier-Lambiotte, Medical Editor, *Le Monde,* in Paris, and Secretary of the *Fondation pour la recherche médicale française.*

I am delighted to pass on to you the very welcome news that *Le Monde* will now be available very soon in an English edition for those of us who don't read French.

C. Escoffier-Lambiotte

REVIEW AND ANALYSIS OF MEDICAL EDUCATION IN FRANCE

The analysis which I intend to make of the first and actual situation regarding medical studies in France presents a rather severe picture of an organization which is favorable in my own personal opinion neither to education or to research, nor to the medical profession as a whole.

My intention is not to deprecate my country or the scientists or teachers whom I highly respect and who are often undertaking a remarkable task under most difficult conditions.

I express my personal criticism only in the intention and with the hope that the joint work we expect to carry out in full frankness will result in some constructive ideas to all and to France in particular.

The outstanding difficulties which now stand in the way of our reform are logically related to developments, of which it is necessary to remind you. They are caused in part by the fact that our social security or health insurance system, which absorbs $6,700,000,000 this year, 10 percent of our national expenses, is covering all the people of our country and all the university hospitals to complete strength, and that medical education is completely free for all the students. These peculiar conditions explain some of the financial difficulties we are dealing with now.

In January, when I was asked to speak about the past and the future of medical studies in France, my intention was to deal with past history, only as much as seemed necessary to understand, on the one hand our hospital and university structures, and on the other, the revolutionary movement of May 1968.

It seemed right that the main part of this account should be devoted to the future, with a forward-looking examination of the reforms which, it was hoped, would be made possible by the educational reform law carried unanimously (apart from the abstention of 33 communists and 6 deputies) by the majority in the National Assembly on the 10th of October, 1968. This law granted our institutes of higher education an autonomy they had never known before. It provided that the responsibility for this autonomy and the desired administrative and teaching reforms should be entrusted to joint management councils. In the case of medicine, these councils were to be composed of elected members drawn in equal proportions from teaching staff, students, and researchers.

About 68 percent of the medical students took part in the elections. Unfortunately, the results and the makeup of the councils, which will draw up the statutes of the new faculties and plan the reform of medical studies, conform all too well to the traditionally conservative spirit of the medical profession the world over. They demonstrate not only the traditional conservatism of the medical profession but, over and above that, the individualism and unshakeable attachment of the French people to their habits and traditions. So, in these circumstances, anything I might say today about the future of medical studies in France would be Utopian, hedged around by uncertainty and the gravest doubts.

Certainly, any reform as sweeping as the one envisaged by the French universities calls for a doctrine, and the educational reform law, based on the triple principle of autonomy, participation, and democratization, is the framework of such a doctrine.

The transition from theory into practice necessarily implies a common purposefulness and a profound renovation, not only of mind but of customs.

The character of the medical faculties' elections of last February seems to preclude, for the moment, any hope of such a renovation. It is not impossible that it may come about at a later date, when the younger generations at last acquire the powers of cohesion, lucidity, and disinterestedness which they are going to need to break their chains.

It is commonly said that these chains were forged by Napoleon a hundred and fifty years ago. In fact, they were forged centuries

earlier, at the dawn of the Renaissance, the time of the great Latin community of clerks.

In those days, the Catholic Church held the monopoly of training the four groups of higher executives that made up 16th century society. This was done in four faculties–theology, law, medicine and art. Conservatism, not to say obscurantism, was rife, and the controlling hand of the Church was severe. Erasmus, denounced by the preachers of the Sorbonne as a "forerunner of Antichrist," was obliged to abandon the idea of founding the Collège de France. King Francis I, who had asked him to do so, had dreamed of making it into a temple of liberal studies and ideas.

At that time, French medicine was steeped in this scholastic tradition. Studies were carried out "at the feet of a master." The orator, from his Chair, discoursed in Latin, and his lectures were made even more confusing by the fact that no textbooks existed to supplement the student's memory. Hospitals, too, belonged to the Church, and were designed as charitable institutions. In Paris, for instance, hospitals came under the Chapter of Notre Dame and were run by the religious orders. The diploma of doctor, entitling him to wear a pointed hat, was bestowed by the learned assembly of clerks, before whom the candidate had to deliver a dissertation where his ignorance of anatomy was at best compensated for by his scholastic eloquence.

Teaching was entirely dogmatic. There was no contact with patients and no training in the hospitals. These were still poor people's homes, where it was practically impossible to examine patients.

In other countries–in England, in Italy, in Germany–the 17th and 18th centuries saw the dawn of scientific medicine, anatomical and clinical methods, and physiology. But in the nine French Faculties of Medicine of the time, teaching was still expounded in confused eloquence, in a vague medico-philosophical system, completely out of touch with reality. There were very few professors–only five in the Faculty of Paris. Their social prestige was enormous, and the real teaching was, in fact, done by the senior students who, at the end of their fourth year of study, became *répétiteurs* or assistant masters, and taught the younger students.

However, on the eve of the Revolution, a strong current of con-

testation was already swirling through the French intellectual world. The three root forces of the state—the church, the monarchy and the corporations—were violently attacked. The Sorbonne was passionately criticized, and Voltaire, in particular, came out with a strong indictment.

In 1792, when the French Revolution was at full flood, the Convention decreed that there should be total liberty of medical practice, and abolished the teaching corporations, the learned societies and academies.

One Convention member, the Count of Fourcroy, who was himself a doctor, drew up a plan for medical reform. It was essentially based on an apprenticeship at the patient's bedside. In a famous report, he condemned teaching by the traditional masters' system. He demanded a compulsory period of hospital training for all students, and called for strict control over all medical practice. His monumental task was crowned with success in 1808, when Napoleon set up the "Faculties of Medicine" as an integral part of the universities and created a hospital hierarchy based on competitive examinations for interns and externs. The main aim of the Imperial University was to train the new regime's future executives. The Emperor wanted them to be both docile and competent. He aimed at a kind of lay congregation, respectful of law and the primacy of Latin, which gave access to the Roman model of civic spirit and morality.

Education was organized into a rigidly hierarchical system, under the control of a grand master. Its immutability, its strict uniformity, turned the University into an enormous training school, a corporation with a solidly structured central administration, enchained and immobile.

The Faculties, which formed the nuclei of this corporate institution, were allowed no initiative, no autonomy. Their basic units, or Chairs, were in reality a collection of mini-feudalities, strictly compartmented. Each unit belonged to one man and to one man only, and he was sole master, until he reached retiring age, of his Chair and of the hospital service under his authority.

This organization meant that anatomicoclinical medicine in France attained a degree of development which made it indisputably supreme for a century. Because of the large scale of this clinical work, and the solidly rooted corporatism of the Faculties, a

simultaneous and parallel teaching system developed, rather like the days of the guilds and their apprentices. Hospital interns were paid by the younger students to coach them for the formidable competitive examination which was the only access to patients' bedsides. Those who succeeded in passing the examination had to perform a fantastic feat of memorization. They then became the colleagues of the department head, the *grand patron*. Meanwhile, the students who only went to lectures at the Faculty were left to moulder in the shadows, ignored and despised.

In this way, a deep and lasting gulf opened up between most of the students in the Faculty, on the one hand, and the hospital on the other. The real teaching was done around the patient's bed, and only a very small proportion of students had access to it. They were the ones who became, as consultants, the elite, and they were often remarkable clinical experts. The Faculty was neglected by the minority who were nevertheless promoted, to such an extent that it was quite possible to be an intern for four years, and even to become an assistant professor of anatomy, without passing more than one Faculty examination.

Conversely, it was quite possible to finish one's medical studies, including the doctorate thesis, without ever having occupied a responsible post in a hospital and having had only the most superficial and distant contact with patients.

The powers of the titular professors were tremendous. They constituted a class of mandarins. Once a professor held a Chair, he held it for the rest of his active life. He was absolute, uncontested master of gigantic hospital departments, some of them with over two hundred beds. But many of these mandarins spent more time in socialite activities or with their private patients than they ever did at hospital or Faculty. Their powers were mainly used—or abused—in the form of nepotism.

It was the mandarins who had the final word in all university hospital appointments of chief residents, assistants, or associate professors. They were empire-builders, and their power was measured in terms of the number of their ex-students whom they managed to put in charge of Parisian or provincial hospital services. Their battle for influence was the main factor in deciding how hospital appointments were distributed, and the interests of public health played little or no part in the share-out.

On the other hand, the professors had absolutely no liberty in teaching or administration. Curricula and teaching methods were laid down once and for all, for the entire University, by the central administration, under the direct authority of the Minister. The same was true in the way the Chairs were distributed, and it was impossible to arrange for a new subject to be taught. That is why, for instance, chemical biology in France was only able to develop at the Pasteur Institute, which is a private foundation.

As for the hospital services, they were run in such a way that even the slightest change was incredibly complicated. For instance, to get a room repainted or a faucet repaired you had to go through paperwork with a dozen or more departments.

This unwieldiness became even worse when social security began in 1945. Now, in 1969, social security covers the entire population and the whole field of public health. It is an immense step forward in social progress and has helped considerably to raise the standard of health in France.

Overcentralization and the pyramid structure of our institutions had led to a monstrous geographical and cultural disproportion between Paris and the provincial universities.

The Faculty of Medicine in Paris trains more than a third of the country's future doctors. This gigantism, combined with its traditionally rigid administration, turned it into an ungovernable monster. Conceived this way, the system could not adapt itself, either to demographic evolution or to scientific discovery. At the beginning of this century, France missed her opportunity so far as biological medicine was concerned, although Claude Bernard was a pioneer in the field. The dual hospital-faculty structure left no scope for research, and the clinical tradition did not lend itself at all to fundamental scientific discovery. And the gerontocracy did not take kindly to the idea of teamwork.

In 1940, war dealt the final blow to this declining medical system. And afterwards, the tremendous demographic thrust of the postwar generation was to bring the whole worm-eaten structure toppling down. Its fall was hastened by the fact that in France, there is no so-called selective policy for university entrance.

In 1958, Professor Robert Debré, famous French pediatrician, then aged 72, took on the task of reforming medical studies. Professor Debré is the father of de Gaulle's first Prime Minister, Michel

Debré. He framed a plan which was greeted with enthusiasm by the younger elements in the university but aroused furious opposition from the conservatives.

The reform aimed to close up the harmful gulf between faculty and hospital, and to encourage basic research. To achieve this, it was decided to create university hospital centers, where students could study every subject and benefit from the presence of laboratories and hospital services. It was made compulsory for all those who held an official post in a university hospital center to work there full-time. Representatives of the fundamental sciences were given hospital posts. This reform, which would have been expected to prevent the May 1968 crisis, on the contrary, hastened it and brought it to a head.

For although the spirit of the reform was just, and it was bold and far-seeing, it was still authoritarian and centralizing. The new teaching and research establishments were still placed under the authority of a limited number of professors with very wide powers. Their colleagues—chief residents, researchers, and assistants—had no statute or contract, and were entirely dependent on the Master's good will. Competitive examinations were modified, but not abolished, and access to hospital patients was still reserved to the minority who managed to pass them. Hospital appointments were still made on the old corporative procedure, and there was no thorough reform of university and hospital administrative organization, no decentralization, no coordination between services. And this, in spite of the crying need for such reform.

The university hospital centers had the monopoly of teaching. This meant that a large part of existing French hospitals were excluded—all the public hospitals known as "peripheral hospitals" and all the private centers. Together, they account for nearly half of the total number of hospital beds in France. Worse, this hospital heritage was allowed to deteriorate seriously, partly because of the great material difficulties during and after the war, but also because they were managed on archaic lines dating from the time when they were built as poor people's homes. Naturally, this conception was incompatible with the needs of modern medicine, which is costly and requires careful planning. Then again, nearly all these hospitals were controlled by local authorities interested mainly in their local problems. All these factors meant that coor-

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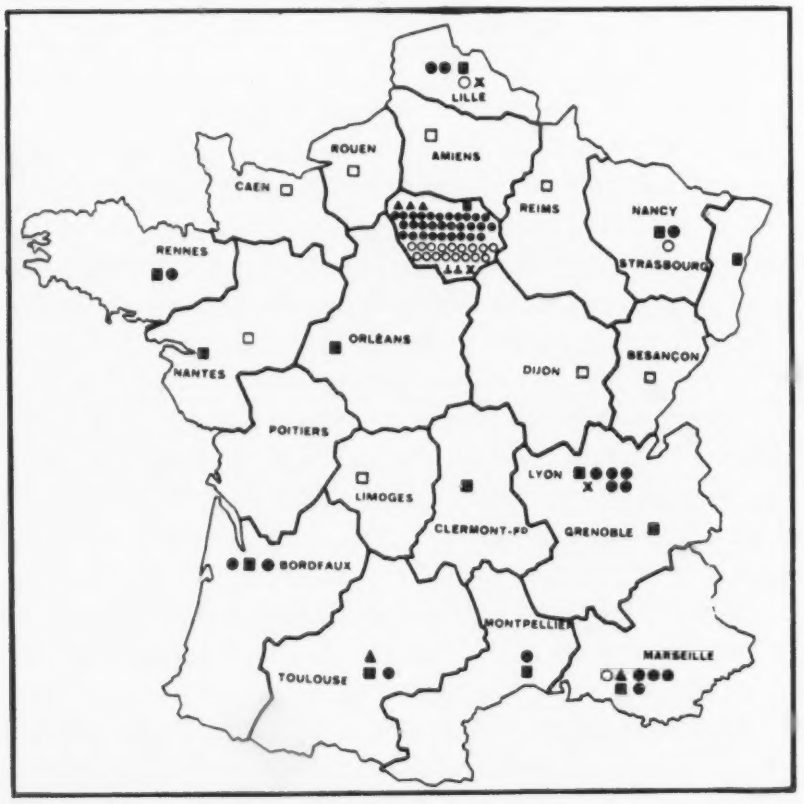
dination, any kind of regional cooperation, proved to be impossible.

The Debré reform tried to encourage a flow of men and ideas between Paris and the provinces by means of national, rather than regional, competitive examinations. It also tried to encourage investment in research in the provinces, in an effort to correct the glaring discrepancy between Paris and other French centers.

The organization entrusted with the promotion and financing of this research is INSERM (the National Institute for Health and



■ University hospital centers located in a city with an established school of medicine

□ University hospital centers located in a city with a developing school of medicine

▲ Medical research laboratories of CNRS (National Center for Scientific Research)

● Research units of INSERM

⊥ A group being organized by the DGRST (General Delegation for Scientific Research)

○ Research group of INSERM

✗ Pasteur Institute and associated laboratories

FIGURE 1 Location of organizations of medical research in France.

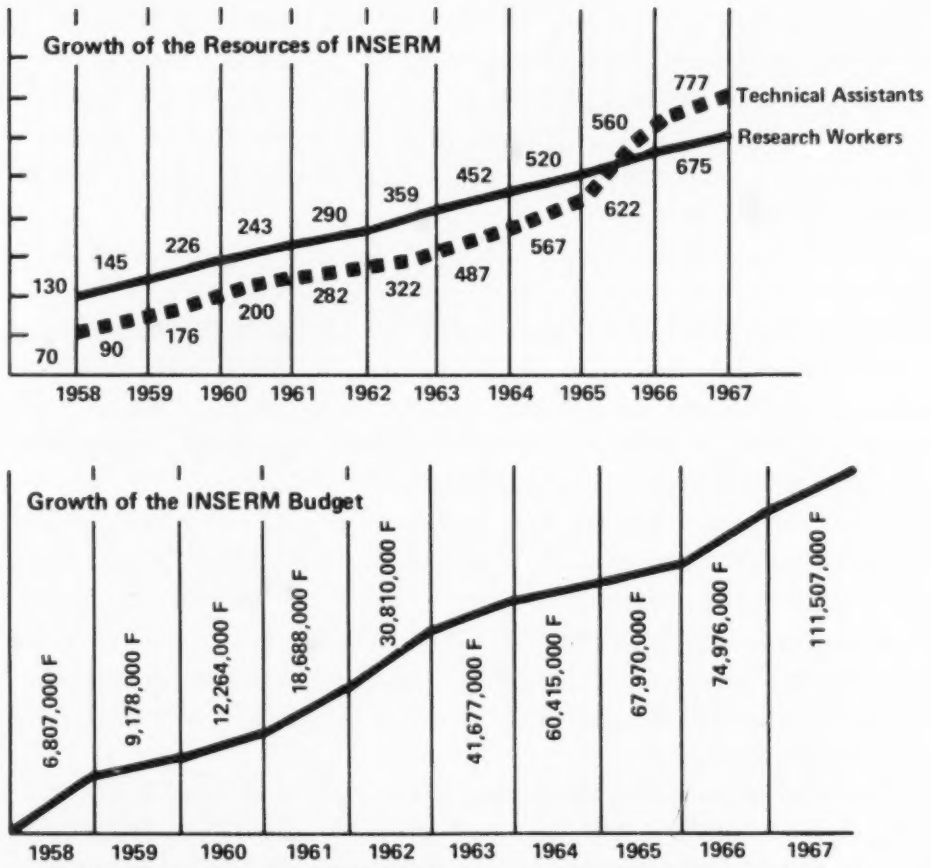


FIGURE 2 Growth of INSERM (the National Institute for Health and Medical Research). Above, the number of technicians and researchers employed, and below, the budgets.

Medical Research). In 1968 its budget, for investment and administration, was $24 million. But the distribution of this money was in the hands of commissions, and many of the members of these commissions were the powerful heads of hospital services, brilliant specialists in clinical work, who often tried to increase their power still further by cornering any funds for research work even though they frequently had neither the men nor the knowledge to develop anything other than clinical observation. There was no other control on distribution of money and, for example, no control by the national assembly or the Congress, as you have here.

Little by little, these clinical specialists came into open conflict with the researchers. The researchers were recruited, not by their

hospital or faculty, but directly by INSERM, and their salaries were far lower than those of their clinical colleagues. Moreover, the clinical specialists were frequently ill-prepared for the triple task which was entrusted to them under the reform: care of the sick, teaching, and research. This is true not only of France but of other countries as well.

Finally, the vast sum of money needed for the creation of the university hospital centers was never forthcoming, and, in this period of transition and improvisation, both students and masters were faced with permanent contradiction and instability. These material difficulties were made only too obvious when the university doors were stormed by the first waves of the huge demographic increase which occurred in postwar France.

This year France has 67,358 medical students, including 26,142 in their first year and 20,219 who should be able to serve practical apprenticeships in hospitals. In May 1968, one-third of this mass of students was concentrated in Paris, ruled with a rod of iron by one faculty, completely incapable of dealing with such an influx, floundering in its own gigantism, deprived of any power of decision or any initiative.

The explosive, prerevolutionary character of such a situation, for the universities in general and the Faculties of Medicine in particular, was already obvious by the beginning of 1968. On the economic and social front, there were no factors of discontent comparable with those observed before the 1789 Revolution, but among the new class of executives and technicians which had grown up in all industrialized countries since the last war, there was ever-increasing uneasiness and discontent.

Here, people who play a vital part in the country's life found themselves restricted simply to carrying out orders. More and more, they felt the need to play a more decisive role, to take part in the policy decisions of the business or organization to which they belong, and even in those of the State. In medical affairs, this aspiration was clearly brought out by the fact that the May movement was led mainly (besides the students) by assistants, chief residents, and researchers.

The current of revolutionary ideas was very strong. Contestation had been dear to the 18th century French writers of the Encyclopedia, but now contestation was no longer aimed against the

king, church dignitaries or the corporations, but against the consumer society, which seems to feed on all energies and to represent the sole ideal of all industrialized countries, whether they are capitalist or socialist.

As in 1789, the constructive side of these ideas remained vague. But it was possible to discern the desire for a democratization of higher education, and the contention that it should be more than just a high-class employment agency, or the cradle of a minority elite. The will to play an active part, to achieve autonomy, to decentralize and to defend the liberties of the universities came out very forcefully, even if it was not always clearly defined.

In fact, these constructive aspects were much more clearly apparent in the faculties of medicine. Medical students worked really hard, and remarkably well, to draft a plan for far-reaching reform. This was done by means of numerous commissions which they set up in the university buildings they had occupied. Through the shattering noise of offensive grenades and tear-gas bombs outside the bronze doors of the faculty, the students imperturbably concentrated all the power of their imagination to drawing up a "white paper" setting out their proposals and their demands.

Teaching staffs took little part in this work—and then only individually. The impotence and inadaptability of the faculty structures were clear for all to see. In those difficult times, the Faculty Council showed itself pathetically at a loss. There was no coherent joint attitude, no *esprit de corps* to be found in this assembly of satraps. The fact was that the Council was not really a corporate body at all, only a juxtaposition of particularist individuals. And the personal qualities and often sincere and constructive ideals of some of the members could not overcome the stifling feudalism of the group.

"Proud of its origins, the reform expresses the passionate desire for a new life, and the will to achieve a truer alliance between our studies and our profession, between ourselves and our professors, between university and society."

This phrase, which prefaced the white paper on reform, sums up the students' aspirations and puts them in perspective. In theory, the new law on educational reform which was framed by the Government in October 1968 aimed to satisfy these aspirations and many other demands formulated in May in all the faculties.

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Under the law, "teaching and research units" have been created, to be grouped in the universities and run by joint management committees of teaching staff and students elected in separate meetings. These units determine their own statutes, and decide how teaching and research should be organized, and what teaching methods and examinations should be used. However, curricular liberty is still very limited, since the Minister decides the curricula for which national diplomas are awarded. Each unit is financially autonomous—within the limits, of course, of the aggregate State budget. Students participate on an equal footing with teaching staff in all decisions, including the election of the Dean or Director. But they have no say in the organization of examinations or in the appointment and recruiting of professors. Finally, the "Chair" is abolished, replaced by the notion of a department covering a wide range of complementary knowledge.

After a stormy debate in the National Assembly, and a good deal of controversy in public opinion, the Minister of Education refused to consider any idea of selection for entry to higher education. The Minister said firmly that the democratization of education implies that access to culture must be refused to no one. Many of his opponents remained unconvinced, among them a large number of professors and lecturers who, for the past ten years, have seen their laboratories and amphitheatres submerged by a mass of young people ill-prepared for, and ill-informed about, the possibilities of higher education and the efforts it demands.

In the Minister's view, the whole idea of culture as such must evolve and must be separated from the idea of employment. He believes that it is no longer possible for it to be based on what he calls "the conception of the elite," a rare thing meant for delight. Culture, says M. Faure, should no longer be measured by the sum of knowledge acquired by a minority, but by that of all members of modern society who are able and willing to enter higher education.

This conception of culture through permanent collective education raises an important problem of doctrine. It will be many years before this concept can be put into practice in the rigidly hierarchical and selective French structures. What is more, it will have to be applied by men themselves formed in the old hierarchical tradition. The concept implies, above all, the incongruity of

students as a social class. Perhaps their present malaise, often expressed irrationally or in disorder, might be in fact a sign of distress, the dread that they are doomed to disappearance.

It is quite possible that society may find it harder and harder to tolerate that higher education should be a privilege granted to certain of its most active and capable members who, while they are receiving their education, behave as parasites, critical of the collective effort which allows them to enjoy this privilege and justifies it.

In medicine, the democratic idea of culture comes up against one obvious practical obstacle. The number of students cannot exceed the capacity of the hospitals where they must learn their profession. Apart from decentralization, autonomy, student participation and the division of the Paris Faculty of Medicine into 10 separate units, the great victory of the student movement was to obtain assurance that all medical students, from their third year onwards, should be admitted to hospital training. This means that in 1969, 20,219 students will be entitled to it, and to this figure must be added about 3,000 interns. But the total number of hospital beds available to the university hospital centers in the whole of France is 69,915. That makes about 3 beds for one student. Their value for teaching purposes varies enormously, and their geographical distribution is uneven. For instance, in Montpellier, Toulouse, and Bordeaux, all of them important university hospital centers, there are only 2 beds per registered student.

So, if the 2,700 doctors trained every year in France are all to have a minimum of medical practice, it seems essential that the university hospital centers should come out of their aristocratic isolation and call on the resources of the regional and private hospitals. If this happens—and it is beginning to happen this year—it will have widespread consequences for the whole organization and hierarchical system, both within the universities and in society as a whole. It will, at last, put an end to the medical teaching monopoly which the French universities have held for eight hundred years. It means that the nonuniversity hospitals and the doctors who run them now have the social duty of sharing the collective work of education, and it associates them in this work, possibly in a federative form.

One might think, then, that this measure blazes a new trail for

the Faculties of Medicine, and that they should become better integrated and better adapted to community needs. The students' demand for a training period with a general practitioner, and the fact that it is now possible for them to take part in the life of their Faculty or hospital, something which until now was denied them, are other factors in this line of development.

Under the reform, the first stage of medical studies now should become a general training in biology. Some subjects would be compulsory, others optional. It will be followed not only by future doctors, but also by students who plan to enter the allied health fields. This is a healthy idea. It should help in the task of vocational guidance, and France would like to see this idea of vocational guidance replace the notion of selection. Indeed, this is essential if the teaching reforms still needed in French medical studies are to be carried out. If they are not, the whole system may be paralyzed by the unplanned influx of students.

But the effectiveness of newly gained autonomy and the extensive powers granted to teachers and students by the educational reform law will depend directly on the determination of those who enjoy this autonomy and these powers. What is more, their success depends on a considerable financial effort and on the complete rethinking of hospital and public health policy. And this, in turn, calls for the support and approval of the general public.

Some of the May revolutionaries committed excesses and expressed themselves in a violent and intolerant way. This, unfortunately, brought about a definite conservative reaction among French people, and this reaction was demonstrated by the government plebiscite in June. Even more serious, a kind of mute hostility toward the entire university world arose.

There was a similar reaction in the conservative trade union to which the majority of teaching staff belong, welding them together in a kind of defensive community. The recent elections were organized in colleges. Professors, assistants, researchers and students, each group voted for its own representatives. In these elections, the conservative teaching staff's union gained an absolute majority in all the medical councils. In some cases, assistants and researchers abstained *en bloc*, taking no part in the elections because they feared that their result would be conservative.

But it is to be feared that corporative interests will take priority in the elected representatives' motives, and that their desire to

safeguard some of their traditional powers and privileges may mean that the reform will be diverted from its aims.

Nevertheless, some of the changes achieved under the pressure of the student movement seem to be irreversible: hospital training for all; new teaching methods with small groups, giving a real opportunity for dialogue; and, most important of all, the fact that now students are associated in all decisions concerning them. All this opens the door to yet further, wider, deeper reforms—taboos done away with, feudalism overthrown.

But the future is overshadowed by an enormous question mark. The French state is the heir to a sturdy Jacobin and Bonapartist tradition.* Can such a state really play the game of autonomy? Will the new generations of teachers be capable of overcoming the particularism and corporatist state of mind of their elders—a state of mind so dangerously incompatible with the team spirit needed for social and technical evolution?

And society? Is it ready to face the problems of education and public health by giving them a priority suitable to the ever-increasing demand? Until now, this has been refused, not only in France but in many other countries as well.

At the present time, the reform of medical studies in France depends on the answers which the coming months will provide to all these vital questions. Over and above the medical profession, they concern the whole of society.

DISCUSSION

Julius R. Krevans, presiding

LAUGIER: I am Associate Professor of Clinical Radiotherapy, but I have been interested during the past 10 years in medical demography and health-professions manpower.

The system of medical education differs slightly in France from that in the United States. The first year of French premedical education takes place in the Faculty of Science. The first and second year of French medical school are equivalent to American and British premedical school. So,

*The Jacobins were the members of a republican club, who held their meetings in an old Dominican or Jacobin convent—hence their name. Their doctrines favored centralization.

the first year of medical school in the States is roughly equivalent to the French third year. For each year of the period 1960 to 1966, before the present student boom, there were about 3,000 students–about 2,500 of whom would graduate as doctors. This year there are about 5,000.

Less than 50 percent of French medical students pass their first-year final examinations. Between 1950 and 1963, the proportion remained about the same: 40 to 45 percent. At the end of the second year, about 70 percent of those left pass their finals. But once the student has reached the third year of medical school, the percentage of success is 90 to 95. This is approximately equivalent to the American situation where, once you have entered a medical school, you usually graduate four or five years later. I would call our French process "progressive selection" inside the medical student community, as opposed to the one-time selection procedure practiced in the United States.

Until 1968, there was only one medical school in each city. Now Paris is divided into ten medical schools, Lyons into three, and Toulouse into two. The total number of medical schools (which was nine 20 years ago) is now 32. About 15 of the medical schools graduate less than 100 doctors per year; 7, between 100 and 200; and 7, between 200 to 300.

In Paris, there are 1,000 to 1,200 new medical graduates every year. This is slightly more than in London or New York. For the past 20 years, Paris has produced nearly half of all new French medical doctors. But this proportion is decreasing as the new schools in other cities increase their output.

In 1969, there are 8,600 students in the first year of medical school in Paris. Their ranks will thin to about 2,600 graduates in 1975 because of the progressive selection system described above.

Figure 1 illustrates a basic problem–the time lapse required to train a medical doctor. This is a problem that no demographer can ignore.

In 1954, 5,000 French high school graduates entered premedical school. Nine years later, they became 2,200 MD's. I say nine years because in order to become an MD in France–as is the case in several European countries, but contrary to U.S. practice–one is obliged to present a thesis. (In the United States, as you all know, once a student has finished his fourth year of medical school successfully, he is automatically graduated as an MD.) The thesis takes from one to five years, depending on its subject and nature. Furthermore, most students delay the submission of their theses for one to three years after medical school because they are residents in a hospital. All in all, it takes an average of 8.7 years from entry into the first year of French medical school, at age 19, until one becomes an MD.

Year after year, the number of students going into the one-year premedical school increases. Last year, there were 18,000. Their numbers

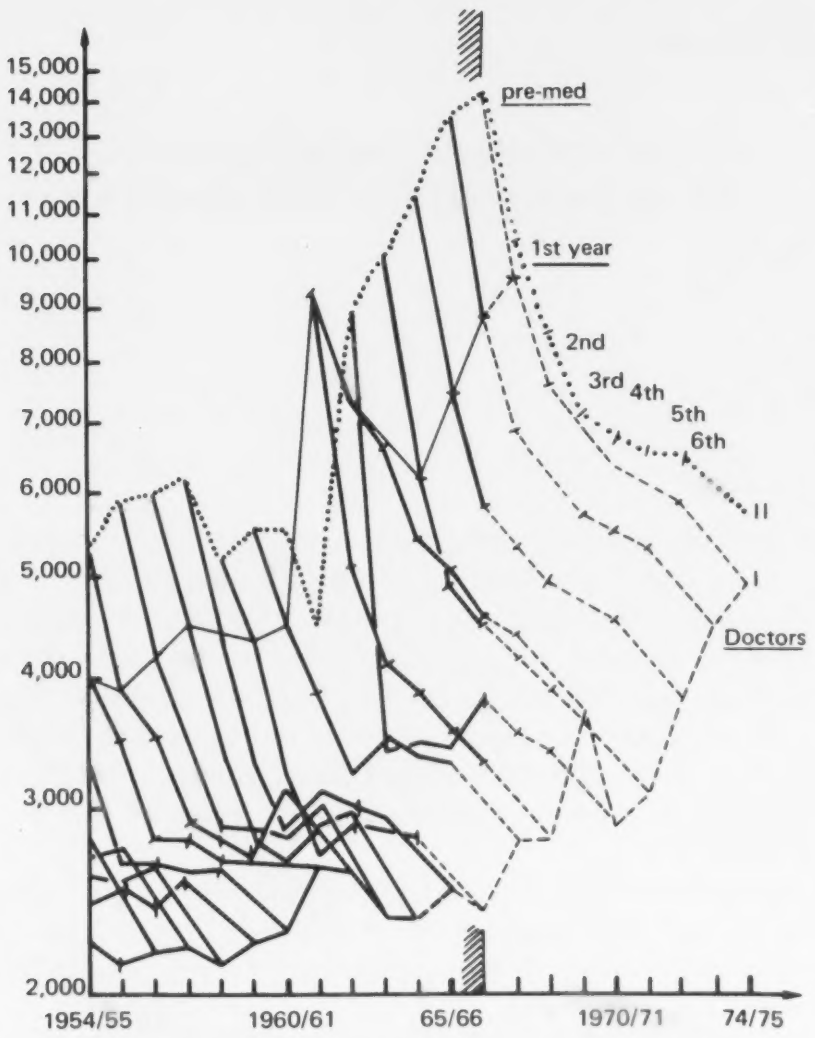

FIGURE 1 Medical students and graduates by year of study, 1954–1966; projections to 1975, two hypotheses. (Source: Rosch, G., and E. Salembein. Medical manpower in France in 1975. C. Sociol. Demog. Med. 8:107–109, 1968.)

will probably dwindle to 8,000, by the process of progressive selection, in the third year of medical school, and we can predict, if the behavior of the examiners remains constant, that the graduating class of 1976 will consist of 6,000 doctors.

Thank you.

KREVANS: We'll proceed now with the program. Dr. Ushiba of Keio University will talk about problems in reorganization of medical education in Japan.

Daizo Ushiba

PROBLEMS IN REORGANIZATION OF MEDICAL EDUCATION IN JAPAN

The system of medical education in Japan was considerably changed right after World War II by the introduction of the American system of internship in the law. However, as I will mention later on, we were again confronted with a new change of the law last year, in which internship was eventually abolished. Thus, our medical education programs must be reorganized fundamentally. This internship was introduced into Japan in 1946. Unfortunately, it was never as successful as was expected at the starting point.

It was true that interns had almost no boarding facilities, almost no salaries, and, in some places, even no qualified instructors, although these situations differed rather markedly depending upon each university or hospital.

In addition, the Japanese government did not take proper measures to improve these bad conditions during more than twenty years. Historically speaking, the students' movement against the internship system had begun already in the early 1950's, but there was no nationwide organized movement, just a small group of radical students protesting. The medical students were rather conservative in general at that time, but they are not conservative at the present time, unfortunately.

Entering the 1960's, the student movement was gradually strengthened, and in the last few years, before the abolishment of the internship, it rapidly invaded almost all medical schools in Japan. In the last stage of this protest against internship, namely, since the middle of the 1960's, teachers in medical schools also

joined in protesting against bureaucratic administration. I would say, however, that the failure of the internship in Japan should be attributed to both bureaucracy *and* the teachers, because of the relative lack of enthusiasm of the doctors in education and the insufficiency of their effort to improve medical education, in its content, at least.

It is unfortunate to say that there has been a traditional belief in Japan that doctors in medical schools should put more emphasis on research than on education, although this situation is now being rapidly improved, I believe. At any rate, the dispute and unrest of the past several years reached a climax in the spring of 1968, and the medical doctor's law has finally been revised. Under the new law, graduates from medical schools are able to get the practice license when they pass the National Board Examination which is immediately following their graduation.

At this moment, it may be interesting for you to see the number of successful applicants for the National Board Examination in Japan, which is shown chronologically in Figure 1.

As you see here, the exams are very easy to pass and have produced around 3,000 license recipients every year except 1968. This was the time the internship was abolished.

Figure 2 indicates the number of doctors and other medical care personnel per population; so we have now about 11 doctors per 10,000 population, and we have now a population of about 100 million in the whole country.

Figure 3 shows the number of medical students, especially the percentage of applicants to school and admitted students. Here, we have the 24 national schools and the public schools as we call them, actually the prefectural and municipal, 9; and the private schools, 13: the total is 46. Here you will see the number of applicants and the admitted students in which you will see the very keen competition.

Of course, this varies greatly depending upon the schools. For instance, Keio University has a good reputation and, last year and this year, we had about three percent admitted.

Returning to my main story, what was the substitute for internship after its abolition anyway? Many arguments occurred on this point, particularly concerning the obligation of postgraduate training courses.

Year	Number of Applicants	License Recipients	Licensed Individuals/Applicants
1956	3,987	3,459	86.7 (%)
57	3,369	2,932	87.0
58	3,621	3,043	84.0
59	3,543	3,260	92.0
60	3,352	3,218	96.0
61	3,526	3,231	91.6
62	3,359	3,108	92.5
63	3,268	3,102	94.8
64	3,210	3,127	97.4
65	3,140	3,034	96.6
66	3,175	3,078	96.9
67	3,109	3,048	98.0
68*	6,686	6,544	97.8
Total	47,347	44,183	93.3

*Internship abolished

FIGURE 1 Number of successful applicants of National Board Examination.

Year	Physician		Dentist		Pharmacist		Public Health Nurse		Midwife	
	Total No. (Thousands)	Per 10,000 Pop.	Total No. (Thousands)	Per 10,000 Pop.	Total No. (Thousands)	Per 10,000 Pop.	Total No. (Thousands)	Per 10,000 Pop.	Total No. (Thousands)	Per 10,000 Pop.
1956	96	10.7	32	3.5	53	5.9	12	1.4	54	6.0
57	98	10.8	32	3.5	55	6.0	12	1.3	52	5.7
58	100	10.9	32	3.5	57	6.1	12	1.3	52	5.7
59	101	10.9	33	3.5	58	6.3	13	1.3	52	5.6
60	103	11.0	33	3.6	60	6.5	13	1.4	52	5.6
61	104	11.0	33	3.5	62	6.5	13	1.4	51	5.4
62	105	11.1	34	3.6	62	6.6	14	1.4	50	4.8
63	107	11.1	34	3.6	65	6.8	14	1.5	46	4.8
64	108	11.1	35	3.6	67	6.9	14	1.4	44	4.5
65	109	11.1	35	3.6	69	7.0	15	1.5	42	4.3
66	111	11.2	36	3.6	71	7.2	14	1.4	46	4.7

FIGURE 2 Number of doctors and other medical-care personnel per 10,000 population.

	Number of Schools	Number of Applicants	Number of Admitted Students	Percent Admitted
National Schools	24	28,078	2,367	8.3
Prefectural and Municipal Schools	9	14,668	636	4.3
Private Schools	13	21,446	1,367	6.4
Total	46	64,192	4,370	6.8

FIGURE 3 Percentage of applicants to medical schools that are admitted as students, 1968.

A special committee, organized by the government and leading teachers, first decided to establish a compulsory system of postgraduate training in which the name of trainees must be registered with the Ministry of Welfare after completing the two-year course in qualified teaching hospitals. But here again, medical students strongly opposed this plan, insisting on their training with their own curriculum, under no obligation. Thus, the compulsory registration system was rejected and there remained, so to speak, a mutilated provision in which the directors of hospitals can report to the government the names of trainees when they finish the course.

We called this seemingly peculiar system, the "reported doctor" system, because the trainees could not be registered as doctors, as was expected at the beginning. You may think that this system without obligation will be entirely meaningless, but there is at least one merit. The government has budgeted the postgraduate training of doctors for the first time in the history of Japan, and every teaching hospital, whether national, public, or private, can get the money on the basis of the number of applicants for this system.

In this respect, this system may be said to be progressive as compared with the poor economic basis of education in Japan in the past. But as expected, strong protests are coming again from students and also from doctors against the still-poor budgeting of the government or against the unclear status of trainees.

A presentiment is unavoidable that the history of the internship may be repeated with the new system. Furthermore, even greater confusion may be anticipated this year because young doctors have already joined with the students in the movement, particularly in national schools.

It should be added here that this movement is much more active in national and public schools than in private schools. The government schools can get along, even if the hospitals were hit by strikes.

Talking about postgraduate medical education in Japan, I have to mention briefly the specialist training programs at present. Specialty courses in Japan have just started, depending upon various programs which are now being set up by each scientific organization of clinical medicine. The requirements for becoming a specialist are being determined independently by each organization. Therefore, we shall be confronted with the difficult problem of what relationship should be found between the so-called "reported doctor" system, which I just mentioned, and each specialist training course. Right now, the majority of organizations seem to be planning to regard the "reported doctor" course as a pretraining course of specialty.

Turning to the undergraduate curriculum, it also needs to be changed as a result of the abolition of the internship. Thus, we have had to tackle this problem before proceeding to more fundamental reform of undergraduate curriculum.

The curriculum of Japanese undergraduate medical education, as you know, originated from the old German system about 100 years ago. After World War II, however, in parallel with the introduction of the internship system, the emphasis has been gradually shifted from classroom lectures to laboratory work and bedside teaching.

Now that internship has been abolished, emphasis must be shifted more abruptly than before to bedside teaching, and basic medicine has to be condensed in a much shorter period in the curriculum.

I should like to show you here, as an example, the present undergraduate curriculum in my Keio Medical School.

Figures 4 and 5 show the curriculum pattern, subject, and period. We have three terms every year during the four undergraduate

Curriculum (Keio M.S.) 1968

Subject	School Year	I			II			III			IV		
	Term	1	2	3	1	2	3	1	2	3	1	2	3
Anatomy	Lect.												
	Lab.												
Histology	Lect.												
	Lab.												
Embryology	Lect.												
	Lab.												
Physiology 1	Lect.												
	Lab.												
Physiology 2	Lect.												
	Lab.												
Biochemistry	Lect.												
	Lab.												
Pharmacology	Lect.												
	Lab.												
Microbiology	Lect.												
	Lab.												
Parasitology	Lect.												
	Lab.												
Pathology 1	Lect.												
	Lab.												
Pathology 2	Lect.												
	Lab.												
Hygiene	Lect.												
	Lab.												
Public Health	Lect.												
	Lab.												
Legal Medicine	Lect.												
	Lab.												
Hospital Administration	Lect.												
	Lab.												

FIGURE 4 Basic undergraduate medical course at Keio University Medical School.

years, and Figure 4 shows only the basic medical course, while Figure 5 shows the clinical course.

In 1969 we modified extensively the curriculum of fourth-year students where they have almost only bedside teaching and polyclinics the whole year.

In order to illustrate the curriculum hours in more detail, I shall show you the next four charts in which the curriculum is shown according to daily hours.

Figure 6 shows the curriculum for first-year students; I don't think it is necessary to explain in detail.

Curriculum (Keio M.S.) 1968

Subject	School Year	I			II			III			IV		
	Term	1	2	3	1	2	3	1	2	3	1	2	3
Diagnosis	Lect. Lab.												
Internal Medicine 1	Lect. Lab.												
Internal Medicine 2	Lect. Lab.												
Surgery 1	Lect. Lab.												
Surgery 2	Lect. Lab.												
Surgery 3	Lect. Lab.												
Anesthesiology	Lect. Lab.												
Orthopedics	Lect. Lab.												
Obstetrics	Lect. Lab.												
Gynecology	Lect. Lab.												
Ophthalmology	Lect. Lab.												
Dermatology	Lect. Lab.												
Urology	Lect. Lab.												
Oto-Rhino-Laryngology	Lect. Lab.												
Pediatrics	Lect. Lab.												
Psychiatry	Lect. Lab.												
Radiology	Lect. Lab.												
Dentistry	Lect. Lab.												

FIGURE 5 Basic undergraduate clinical course at Keio University Medical School.

Figure 7 shows the curriculum for second-year students. In pathology, emphasis is put on laboratory work and the ratio between laboratory and lecture is around 2 to 1.

Figure 8 shows the curriculum for third-year students. By "CI," I mean a new program set up since last year that consists of lectures on "clinical introduction." It is a joint presentation from people in various clinical fields, given on particular disease subjects. For instance, some particular symptom, diagnosis, or treatment, and so on.

First Year (Keio M. S.) 1968

		Mon	Tue	Wed	Thr	Fri	Sat
I Term (13W)	AM 9:00 10:30	Biochem.	Anat.	Physiol.	History of Med.	Physiol.	Biochem.
	10:40 12:10	Physiol.	Histol.	Biochem.	Physiol.	Biochem.	Anat.
	PM 1:00 2:30	Lab. Histol.	Lab. Neuro-Anat.	Lab. Biochem.	Lab. Histol.	Lab. Physiol.	
	2:40 4:10						
II Term (14W)	AM 9:00 10:30	Biochem.	Lab. Anat.	Physiol.	Biochem.	Physiol.	
	10:40 12:10	Physiol.		Lab. Anat.	Physiol.	Lab. Physiol.	Lab. Anat.
	PM 1:00 2:30	Lab. Anat.	Lab. Biochem.		Lab. Anat.		
	2:40 4:10						
III Term (9W)	AM 9:00 10:30	Embryol.	Embryol.	Hygi.	Biochem.	Pathol.	Biochem.
	10:40 12:10			Intro. of Med.	Embryol.		
	PM 1:00 2:30	Parasit.	Biochem. 2W. Embryol. 2W. Microbiol. 5W.	Biochem. 1W. Embryol. 3W. Microbiol. 5W.	Parasit.	Biochem. 2W. Embryol. 1W. Microbiol. 6W.	
	2:40 4:10						

FIGURE 6 Curriculum for first-year students at Keio University Medical School.

Figure 9 shows the curriculum for fourth-year students. Almost all hours are devoted to bedside teaching except some hours for CI and CPC.

Of course, we don't think this modified curriculum is a perfect one even at present. We must seek some new approach to curriculum reform based on modern trends in medical education, particularly those that take social needs into consideration.

Probably, I should describe student pressure on the reform of

Second Year (Keio M.S.) 1968

		Mon	Tue	Wed	Thu	Fri	Sat
I Term (13W)	AM 9:00 – 10:30	Clin. Diagn.	Microbiol.	Clin. Diagn.	Parasit.	Clin. Diagn.	Parasit.
	10:40 – 12:10						
	PM 1:00 – 2:30	Pathol.	Pathol.	Microbiol.	Pathol.	Microbiol.	
	2:40 – 4:10						
II Term (14 W)	AM 9:00 – 10:30	Surg. & Anesthesiol.	Surg.	Hos. Adminis.	Clin. Diagn.	Surg.	Clin. Diagn.
	10:40 – 12:10	Int. Med.	Int. Med.	Hygi.		Denti.	
	PM 1:00 – 2:30	Pathol.	Hygi.	Radiol.	Pathol.	Pathol.	
	2:40 – 4:10			Psych.			
III Term (9W)	AM 9:00 – 10:30	Pharmacol.	Int. Med.	Surg.	Int. Med.	Gynec.	Hos. Adminis.
	10:40 – 12:10			Pediat.	Pediat.	Psych.	Int. Med.
	PM 1:00 – 2:30		Surg.	Radiol.	Pathol.	Publ. Hlth.	
	2:40 – 4:10					Int. Med.	

FIGURE 7 Curriculum for second-year students at Keio University Medical School.

medical education in Japan in more detail, but I leave this problem at the moment to the future discussion.

Thank you.

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Third Year (Keio M.S.) 1968

		Mon	Tue	Wed	Thu	Fri	Sat
I Term (13W)	AM 9:00 10:30	Gynec.	Pediat.	Surg.	Orthope.	Obst.	Surg.
	10:40 12:10	Orthope.	Urol.	Pediat.	Leg. Med.		Dermatol.
	PM 1:00 2:30	Int.	Psych.	Int. Med.	Pharmacol.	Pharmacol.	
	2:40 4:10	Med.	Publ. Hlth.	Radiol.			
	4:20 5:50			C.P.C.			
II Term (14W)	AM 9:00 10:30	Gynec.	Pediat.	Int. Med.	Orthpe	Ophthal.	Surg.
	10:40 12:10	Obst.	Urol. 9W. C.I. 4W.	Int. Med.	Leg. Med.	Oto-Rhino-Laryngo.	Dermatol. 9W C.I. 4W
	PM 1:00 2:30	Int. Med.	C.I. 10W Clin. Microb. 4W.	Leg. Med. 10W Clin. Microb. 4W	Int. Med.	Publ. Hlth.	Clin. Microb. 2W
	2:40 4:10	Psych.		Orthpe. 10W Clin. Microb. 4W.	Surg.		
	4:20 5:50			C.P.C.			
III Term (9W)	AM 9:00 10:30	C.I.	Publ. Hlth.	C.I.		Ophthal.	Leg. Med.
	10:40 12:10				Oto-Rhino-Laryngo.	Int. Med.	
	PM 1:00 2:30	Surg.	Psych. 5W Radiol 4W	C.I. 5W Clin. Chem. 4W	Int. Med.	Obst.	Clin. Chem. 4W
	2:40 4:10		Int. Med.	Leg. Med. 5W Clin. Chem. 4W	Pediat.	Surg.	
	4:20 5:50			C.P.C.			

C.I. Lecture on Clinical Introduction

FIGURE 8 Curriculum for third-year students at Keio University Medical School.

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Fourth Year (Keio M. S.) 1968

		Mon	Tue	Wed	Thu	Fri	Sat
I Term (13W)	AM 9:00 10:30	Polyclinic					
	10:40 12:10	Bedside Teaching					
	PM 1:00 2:30			Surgical Grand R.			
	2:40 4:10			Medical Grand R.			
	4:20 5:50	C. I.		C. P. C.	Publ. Hlth.		
II Term (14W)	AM 9:00 10:30	Polyclinic					
	10:40 12:10	Bedside Teaching					
	PM 1:00 2:30			Surgical Grand R.			
	2:40 4:10			Medical Grand R.			
	4:20 5:50	C. I.		C. P. C.			
III Term (9W)	AM 9:00 10:30	Polyclinic					
	10:40 12:10	Bedside Teaching					
	PM 1:00 2:30			Surgical Grand R.			
	2:40 4:10			Medical Grand R.			
	4:20 5:50	C. I.		C. P. C.			

C. I. = Lecture on Clinical Introduction

FIGURE 9 Curriculum for fourth-year students at Keio University Medical School.

KREVANS: Dr. Ushiba's paper and the following two all have to do with the organization of new medical schools, so what I should like to do is have the three presentations and then we can come back for discussion later.

The next paper will be by Professor Pfeiffer on the organization of new medical schools.

Ernst F. Pfeiffer

ORGANIZATION OF NEW MEDICAL SCHOOLS

After World War II, research and teaching in Germany had to be resumed under the most primitive conditions—in totally or partially destroyed institutes or hospitals without any funds to pay for skilled help, animals or chemicals. Such a situation prevailed until the mid-fifties.

I remember that still in 1950, I was working as a third-year resident without salary at the Department of Medicine of Frankfurt University, at the age of 28, married, and my father not only supporting me and my family, but also paying for the rats I was using for studies of experimental glomerulonephritis. Although in the following years this unsatisfactory situation was changed, to be sure, the effort to improve the material basis of research and teaching was much greater than the attempts to attack seriously the problems of organizing academic institutions.

Because of the federal constitution of our country, it was much easier for the various leaders of the 10 different states to provide the money for the construction of new university buildings than to introduce changes in the teaching system or in the way a university hospital is directed.

After all, the education of the medical student had to be in accord with the so-called federal law regulating the requirements for qualifying for an MD or being approved by the state board as a physician.

The Bavarian University of Munich, for instance, was not permitted to establish a new curriculum. Moreover, even if a new curriculum were adjusted to such order of approval, it could not in-

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terfere with the sacred right of the German student to wander from one university to the other. In other words, basically the same lectures, seminars and courses had to be given at each term in each university.

However, the said law regulating the MD license dates back to the period after World War I. It hasn't been substantially changed since, except for some minor additions.

It became apparent that the building of new lecture halls was never going to keep up with the increasing crowds of students appearing every year. This growth will continue into the 1970's, because the birth rate is going up from the years after the war.

Education is free in our country from the beginning to the end of the university. Moreover, for students in medicine and basic science, the lecture halls are not of such importance as they are for scholars in philosophy. Facilities for teaching in the chemical, physical, and clinical laboratories count more. It seemed senseless to invest all the money needed for the future requirements without instituting vigorous changes in medical education, as such, and in the underlying academic life.

Three lines of approach to the reform of medical education and research can be distinguished, all of them starting five to ten years ago.

First, a committee under the direction of the federal Ministers of Interior and Health was formed, consisting of delegates of the medical association, the different states, and the medical faculties. All disciplines examining the students in the preclinical and clinical terms were represented. This committee was supposed to suggest a new federal law for the requirements for the MD qualifications. A continuous fight began between the professors representing different specialties. Each was thinking largely of his own discipline. Only occasionally did one of them volunteer to give his time for lecturing or practical teaching by doing something for others.

After many meetings and discussions, they agreed that, in general, zoology and botany will be taught as one subject—biology, that anatomy will be shortened in favor of biochemistry, and that, instead of the 6 or 6 1/2 years of studies of medicine and two years of internship, six years will do it altogether, with the last year devoted to the internship.

High school in Germany starts at age 10 and goes to 20. Then students go directly to the university so all this college time is included, partially divided between high school and university. Then students stay six years for medical studies at the university to qualify, followed by two years internship.

Now, the state board examination is divided into three parts, which have to be taken during the clinical curriculum, with the requirement that students pass a part of this examination after having learned a certain number of subjects.

The last part of the state board examination has to be taken after the year as an intern. Eighty percent is written examination, including multiple-choice questions, and 20 percent is oral examinations. Up to now, it has been the reverse.

The new regulation, after having passed parliamentary procedures, will be decreed and will become effective by January 1970.

Secondly, independent of the committee devoted to the problems of uniform education of future doctors, the Federal Research Council also suggested a number of changes in medical teaching and research. The Federal Research Council, instituted by the President of the Republic in the early fifties, is a completely independent body of men of high standing in education and research, coming from all fields, who are supposed to make suggestions and recommendations, after critical analysis, for improvements in the old university policies.

I think it is comparable to a British Research Council, or more properly, to a Royal Commission. It has absolutely no political or legal power, but is highly influential. Its suggestions are always neatly printed. I brought them with me. Everything is included, e.g., the requirements—how many doctors are needed in Bavaria in 1986, etc.—certainly it's a typical German product.

This Federal Research Council is highly influential since its suggestions are regarded a sort of bible by the Ministers of Education of the ten states.

At last, they have something useful in their hands which they can use profitably when dealing with the universities and with the needs of the universities under their supervision.

May I just quote briefly some of the suggestions that appeared recently in that volume which I have given to my neighbors as examples:

"Studies have to be organized in blocks, always containing one subject being taught for a certain period of time and then closed.

"Teaching in clinical practice has to be at least 50 percent at the bedside with only some introduction given by formal lecturers.

"Independent divisions or sections in institutes and hospitals have to be instituted to give maximum opportunities for work in the specialties. Direction of an institute or hospital has to be divided between the different directors of the divisions or sections. They should have the same powers and should always elect a chairman for a limited time.

"The chairman must be given competent assistance by his university administration.

"Independent sections and divisions can be directed by Assistant Professors and other people of lower academic ranks.

"For certain institutions, steps must be taken to ensure multiple use; for example, radiology, and anesthesiology, central laboratory. Centers for clinical research have to be instituted alongside existing hospitals and the existing hospital's laboratories.

"The regulation of private practice has to be reexamined and has to be changed regarding the clinical faculties. If there are *numeri clausi*, that means restrictions of admittance of students because of shortage in space, these have to be worked out between the university and the Ministers for Education.

"Facilities for medical research and education have to be extended in such a fashion that the number of students starting each year in general medicine should, in each university, be in the range of 100 to 150 and not more, and as regards dental medicine, not more than 100.

"An assistant professor can be made an associate professor without waiting the six years we have had to wait before, and so forth."

The third approach was a direct one, consisting of the foundation of new universities by different states. Six new universities have been founded in recent years. Not all of them have all faculties. Some medical faculties were attached to existing academic institutions such as technical universities, which have been a specialty in our country since the last century and which work well, by the way. Among these new universities is the University of Ulm, established about two years ago, the university from which I come.

However, in contrast to the other universities which were created, I should like to say again that through the initiative of the various states, Ulm University was not opened until the Founding Committee had worked out for exactly three years the general program, the curriculum for students, and an outline of the academic structure.

The report of the Founding Committee, which I also brought with me, is called, in the local slang, the "gray bible." Like the original bible, its contents are sometimes difficult to reconcile with the needs of practical academic life, as I now know.

This Founding Committee started its work in 1954. It was completely independent, and it tried to implement in one institution many of the ideas for reform which were going around the country. Said Committee took its task seriously. It went back to the literature. This is a point where I have to pay tribute to the American contribution to the reform in medical education. I mean Abraham Flexner. In my opinion, never has anything so profound, intelligent, and all-around good been written on medical education as what this man published between 1911 and 1941. When you want to read the real story of German medical education, you have to go to his reports to the Carnegie Foundation which appeared in 1912, dealing with the European situation.

Of course, there are other names such as Welsh, Osler, and others, and it is true that the idea of the full-time system, for example, was conceived in Ludwig's physiological laboratory in Leipzig more than a hundred years ago and was practiced by Professor for Internal Medicine Von Ziemssen first in Erlangen and afterwards in Munich.

Flexner, assisted by a number of young Americans, working in those days in several German hospitals and institutes and who all became leading physicians in their own country afterwards, had only to collect these ideas and suggestions. But how he did it, how he went behind the screen is something to admire, I feel, forever.

When World War I started, the fundaments of your system of medical education were already laid here, and you had become independent of Europe. Many of the criticisms Flexner had regarding the German system in 1912, were still valid after World War II. Too much theory, academic medicine at its best, large

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crowds of students gathering in big amphitheaters, far from the professor, etc. When our Founding Committee at Ulm started to gather and to talk, the establishment of that Committee had already influenced remarkably the creation of Ulm University and the way of thinking of the existing bodies concerned with reforms in medical education.

In part, it was due to the personal factor of a number of individuals being members of the Ulm Committee and also of the Research Council working on the new law for medical qualification.

Thus the existence of the Ulm Committee was already speeding up the activities of the others. As a matter of fact, many, if not most, of the suggestions and recommendations I discussed before in relation to the two other bodies were first brought up in the Ulm Committee.

The Committee went far beyond the suggestions, accepting the formal paragraphs of organization as understood by themselves. It gave serious thought to some other facts.

The enormous upswing of science at the beginning of the century gave to medicine completely new ideas and methods for the analysis of physiological function and dysfunction. The rapid growth of information led to the founding of many special disciplines, which today form the different chairs of the medical faculty.

The steadily increasing specialization, on the other hand, creates disadvantages which make it difficult to give a well-rounded medical education to young doctors. Teaching and research are closely bound together.

Medical research must keep pace with the forward steps taken by the basic sciences of physics, chemistry, and biology. In every country of the world, this problem is still unsolved: How to integrate an active and successfully working researcher in basic science into the world of the hospital. It means that a physicist or chemist who works in the clinical institution can scarcely ever hope to be awarded a chair in his own faculty. New ways of education must be found which take into account also the developments of the next 30 years. These steps must be in accord with the financial structure of a European university, which is practically always state-supported.

The structure must be flexible enough so that, on the one hand,

it is able to accept students educated by other universities while, on the other, it can offer education to foreign students and postgraduates, which they can successfully use in their homeland.

So, the Committee came to the conclusion that there was only one way to organize a new school, namely to guarantee an exchange of education in medicine and basic science within which a researcher could choose his place of work and faculty, without penalizing his career. The Committee sought to create a center in which a basic research man such as a physicist, chemist, or biologist would be able to work on clinical problems. In this, the Committee has been successful. The plan will reduce the need for a researcher to make an arbitrary choice between faculties.

Other thought should find expression in the architectural structure so that isolation in special disciplines can't be noticed.

The implementation of this scientific integration is shown in Figure 1, which shows the organization of the natural science, theoretical medicine, and clinical medicine faculties. By establishing group divisions in physics, chemistry, biology, and psychology—which bridge the three faculties—the committee has sought to guarantee a place for the researchers as well as provide

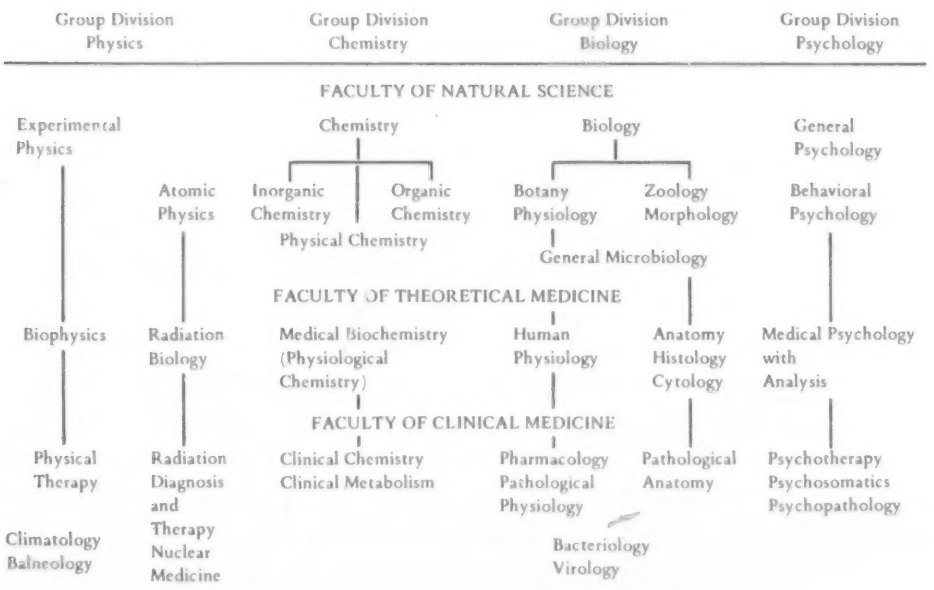

FIGURE 1 Organization of faculties of natural science, theoretical medicine, and clinical medicine.

the necessary clinical and other instruction. Researchers, clinicians, and students can work within a group division, which has responsibility for their careers.

The Research Council shall coordinate and plan research programs going beyond the group divisions. Of course, the organization of the big hospitals will meet these changes. Obviously, the larger disciplines like internal medicine and surgery must be maintained whereby the concept of the American departmental system can partly serve as the example. We call it *Zentrum.* It maintains unity in which the specialty portions of medicine are combined.

The function of the Executive Committee, to which all the full professors belong together with a number of others, is to ensure coordination of the teaching and medical programs.

The old, strong hierarchical system must give way to organized collaboration. The structure of the medical institutes should be changed similarly. Several related chairs will be brought together in the unit. The apparatus and knowledge of different specialties can be used in common. The teaching program in medicine will also exhibit changes by introducing the basic concepts of psychology and psychotherapy in addition to comprehensive studies of basic science. Integrated teaching: the lectures of larger disciplines will be presented by a team of teachers offering a multiplicity of individual knowledge, which I think is a very, very difficult task to achieve because it is so time-consuming.

In order to improve practical education of medical students, hospitals in the vicinity of Ulm will be connected with the university as so-called "teaching hospitals." Five students can serve one ward, 20 beds, reviewing the type of curriculum. During the year in which they are interns, they sleep in that place.

Students will be taught courses outlined by professors and lecturers of the school including the physician-in-chief of these hospitals. In addition, students will be farmed out to general practitioners for three to four weeks per year. In each case, these general practitioners will have an opportunity to work in the teaching hospital in order to observe the recent advances in modern medicine.

Along with the program directed towards practical medicine, a program for theoretical medicine will be furnished. In the orientation to medicine, the student should be able to advance after four

years to the level of a PhD, which we don't have in our country. It is completely separate. We don't have a PhD in medicine. But, by that system, he can select after six terms to go into basic science and get his degree there.

Another important feature of the university will be a "House for Colloquia and Symposia." In our particular case, this place will be a castle dating back to the Middle Ages, which overlooks the Danube. Because advanced education and research are no longer possible without international cooperation, the government has provided extra chairs for guest professors. Thus, teaching and research can be enriched through the cooperation of professors from other countries.

The castle has been bought. Two million marks were brought together from various sources including the Volkswagen Foundation, through the initiative of the *Rektor,* Professor Heilmeyer, and it will be ready at the end of this year. There will be 30 apartments, lecture halls with translation facilities and everything. It will be a very nice place overlooking the Bavarian countryside for about 60 miles. You even can see the Alps on some days.

Also, a solution to the question of the private practice of a clinical university teacher in a full-time system for the handling of private patients has been found. Directors of laboratories and sections will be allowed to participate in this system.

The final form will be a university campus upon a wooded hill 600 to 700 meters above the sea level overlooking Ulm. The architectural class of Stuttgart University is already working on the structural plans, and they have started on the buildings for theoretical medicine and basic science.

For the realization of the structures for the first plans, 400 million deutsche marks were given by the Parliament of Baden-Württemberg. Other money will come from the Federation because states are negotiating among themselves to achieve some kind of balance between the rich and poor states. Of course, the rich don't want to give the money. The poor states want it. At least the states will get back about 50 percent of said money which they invest beforehand.

In this small state of Baden-Württemberg, there exist more universities than any other German state. Therefore, I think we should congratulate the government and parliament of Baden-

Württemberg because in the midst of financial difficulties in 1966 suffered by the entire German Republic, they were willing to continue this project and voted for its completion.

Now what has been done in the meantime? The University was opened in February 1967. The community hospitals were taken over in Ulm. The Department of Internal Medicine, on which I have to act for five years as Chairman, was created. It consists of 10 sections and divisions. The Steering Committee includes three professors, two associate professors, one chief resident, one assistant physician, and one assistant. Until now, we have had no students.

The service is divided into horizontal and vertical service. That means we didn't create independent specialty units regarding concentrations of the same patients in one ward. Patients suffering from various diseases are being taken care of in one ward.

The Department has 330 beds on 16 wards. Now, the specialty service, for instance, of the Department of Endocrinology and Metabolism, with its own number of skilled help of technicians and laboratories, is taking care of all the patients suffering from endocrine or metabolic disorders distributed on all wards.

Since January 1, 1969, we have been integrating also the Department of Pediatrics. Now the center consists of the Center of Internal Medicine and Pediatrics, and I think that it is very worthwhile because all that you are instituting and building in a special section or division can be used by the pediatricians the same way. When you go through it, you don't find more than three methods which you have to build up, in addition to what you already have for internal medicine, because of the needs of the pediatricians.

All the money coming from private practice is going into one banking account. Now, when a new offer is made to a full professor, associate professor, or assistant professor, head of a division or a section, then he is dealing with a committee consisting of the *Rektor* of the university, the president, and a judge, and two other professors from other universities. Then, they define what he gets as guaranteed money per annum. Of course, there are certain rules: assistant professor, not more than 10,000 deutsche marks in addition to his salary which is in the nature of about 25,000; associate professor, starting with 30,000 in addition to his salary

in the range of about 35,000; full professor, clinical medicine, starting with 60,000. The state of Baden-Württemberg has guaranteed that amount of money for the first five years, but in 1968 we had almost no need for more state support. We have calculated that we need about 3 million deutsche marks per annum, and we want an additional 10 percent for distribution among the basic science people when, for example, we want to "buy back" one physicist whom you have lured from Germany to the United States.

Already the founding of our school has brought about changes in the opinion of the others. Now five similar centers are in preparation or already built in Hamburg, Frankfurt, Hannover, Göttingen, and Essen.

Postgraduate teaching was done right from the beginning. Most of the students who came are preparing their theses.

Preclinical teaching will start in the fall of 1969. In existence already are gynecology, pathology, documentation and statistics, physiology, morphology, anesthesiology, physical chemistry, chemistry, and biochemistry.

Now, when I came to this country after having received a letter from Dr. Krevans saying I should devote my paper to the question of how attitudes of our students in Germany have changed and what this change in attitude has meant to the design of educational programs, I have to say that all the reform of the university was thought of by these different boards and especially by the boards preparing ours and other new universities.

What the student movement has done is to speed up the situation in general, and as I see it, to break a lot of resistance. Now, there are too many plans for reform. There is at least one plan of reform in each of the ten states. There are the Ministers for Cultural Affairs and for Education asking the universities to develop a so-called new basic order. The students are fighting for participation in these different bodies of the universities—the senate and the faculty. Sociology, psychology, and philosophy are mainly behind. The medical students haven't done too much until now, and also no real fundamental plan has been brought forward. I also don't think that they can change much further than we have already done in Ulm, but there will be different opinions. One different opinion certainly will concentrate on the

numerus clausus. The *numerus clausus* has been introduced, in the meantime, to all German universities. They don't accept more than they can accommodate: up to 100 students in the smaller universities, and 240 in some of the bigger ones. However, the students always refer to the Constitution: Everybody should be free to have his own way of life and education.

The next problem is the assistants. I think that is a much more difficult problem. The assistants are now really going on the barricades, and they have learned a lot from the students. They demand to be called assistant professor right after having been qualified by the university. They want higher salaries and representation in the boards, which are directing the policy of the university.

I should like to close by saying that I should like to see the conservative situation prevail in our country for at least ten years, until we have shown that Ulm really is flourishing and is introducing the new period of paradise.

So everybody now is claiming to create a paradise, and, perhaps, the others will be faster than we are in that new university in which we have tried to institute some real changes.

Thank you.

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J. D. K. North

ORGANIZATION OF A NEW MEDICAL SCHOOL

There can be few more challenging experiences than assisting in the creation of a new school of medicine. The School of Medicine in the University of Auckland admitted its first 60 students in 1968 so that we are still in a stage of active development. Student dissatisfaction with our curriculum has yet to emerge.

The planning of a medical school can only be understood in the context of the community that it is designed to serve, and I therefore propose this morning to discuss briefly our health services in New Zealand before considering the curriculum of the School of Medicine. Ideals, as every planner knows, have to be adjusted to the economic and medical realities of the locality.

New Zealand is an isolated community of two and three-quarter million people in the South Pacific, more than 1,200 miles from Australia, and has been served for the past 80 years by one Medical School in the University of Otago, based at Dunedin in the cold south. The warmer climate in the north has encouraged both the population and industry to move to the Auckland area, which is now the largest city in the country, with a population of over half a million.

The Polynesian people now constitute 7 percent of the population in Auckland and consist of both Maoris from other parts of New Zealand and Polynesians from the Pacific islands who have come to Auckland for work. We therefore have two population groups, which will be very useful in the development of socio-economic studies in the future.

63.d

New Zealand, like the Scandinavian countries, is relatively advanced in social legislation. It was the first country in the world to give votes to women—in 1893, although the Territory of Wyoming recognized the inevitable as early as 1869. Over 30 years ago, in 1938, the Social Security Act came into force in New Zealand, and we went through the medical revolution that is occurring in a more limited fashion in the United States today. Both political parties, National and Labor, agree that in a late 20th century society, it is the responsibility of the community to ensure that no person need fear the economic consequences of disease. This concept has been firmly accepted by the great majority of people in New Zealand, and political differences are reflected more in methods of application. For the past 30 years, we have provided all citizens with free hospital care, free medicine, free laboratory and x-ray facilities, together with a partial refund from the government for doctor services. The personal contract relationship between patient and doctor has been retained, and there is no capitation payment for general practitioner services as in the United Kingdom.

THE ROLE OF THE GENERAL PRACTITIONER

The general practitioners have remained an effective group delivering primary medical care and still constitute about half of the 4,000 practitioners in New Zealand. As in most countries, this is the group of doctors most in need of finding a new identity. Group practice has developed only to a limited extent and shortages are at present being felt in many country areas.

This system has established high standards of medical care in many areas. For instance, the 1965 infant mortality rates at 19.5/1,000 (whites 18, Maoris 29) remain substantially better than that for the United States of 24.8/1,000 (whites 21, nonwhite 40) and the quality of medical treatment delivered to patients in hospitals has been high. It was in Auckland that the first aortic homograft valves were transplanted and the first fetal blood transfusions were successfully performed.

The one major problem that we have is the worldwide issue of

how to continue effectively to render primary medical care to the community and how to attract young doctors into this broad specialty with its exacting demands.

In New Zealand, the community attitude is clear that individual people want their own family doctor. Whether this service will continue to be provided by a family doctor working in association with a group of colleagues or whether the pediatrician and the physician in internal medicine together will run primary medical care is uncertain. Probably both will develop side by side.

Up to the present time, nearly all government funds outside the hospital service have been spent on consumer benefits, but it is likely that the government will be prepared to provide capital for the development of selected regional health centers for groups of general practitioners and pediatricians with substantially greater resources for the investigation and treatment of their patients.

Unless those engaged in general practice can improve the image of their role in medicine, it will be very hard in the Medical School to persuade students that this is a rewarding and satisfying form of practice. One of the objects of the family growth and development study, which starts early in our course, is to enable a personal association to develop between each student and the general practitioner, which should enable the student to get an insight into the activities of general practice before making contact with hospital specialists who will play a dominant role in the teaching of medicine during the early clinical years.

MEDICAL SERVICES IN HOSPITALS

At Auckland Hospital, we are creating a new organization of clinical services in internal medicine. We are trying to draw from some of the experiences of the United States and to implant these in a hospital which is traditionally British in functional organization. Previously, our beds have been organized in 24-to-30-bed units with one house physician, the equivalent of an intern or first-year resident, one registrar, and two part-time consulting physicians. Several specialty units have developed with a large number of beds which have attracted most patients in the specialty. This

has produced a serious imbalance of patients in general medical beds which could seriously interfere with the proper training of medical students.

At Auckland Hospital, each specialty service in internal medicine will have a limited number of 6 to 8 beds, one service being attached to each general medical ward of 27 beds. Thus, at least two-thirds of the inpatient service of the specialty group will be, as in the United States, on a consultative basis to patients in general medical beds. At the same time, the specialty group will retain a small nucleus of beds for patients of particular interest, requiring special investigation. This should ensure that specialty physicians will have an opportunity to make general medical rounds for several months each year.

In comparison with many American university hospitals, I am concerned to see that the university teaching staff in medicine retain a more personal responsibility for individual patient care than occurs in many of your medical schools today. Patient management by conference dissociates physicians from the personal problems of each patient and even when acting as attending physicians in the wards, it is my impression that many university physicians in this country are not as sufficiently involved in the management of individual patients as I would wish from their counterparts in New Zealand. I think this is a field in which teaching by example is essential for medical students. Without this, a doctor ceases to be an effective physician.

The base hospital for the Medical School will be in a new 800-bed hospital, the first stage of which will be occupied in the next few months. The Medical School, connected by a tunnel to the hospital, is being built 80 yards away from the main building.

General practitioners do not look after patients in public hospitals in the larger cities in New Zealand, but there has been a relatively close link between the hospital services and the general practitioners in the Auckland area. In particular, there is an active group in the College of General Practitioners anxious to contribute to the training of our medical students.

In 1962 when I visited the United States, I was impressed by the air of indifference within medical schools to the problems of medical care in the community, and it was interesting, when I returned in 1966, to see the change in emphasis and the new

awareness in school after school of their responsibility to assist in providing medical services for the community.

UNDERGRADUATE MEDICAL COURSE

The course in Auckland can be divided into three phases: first, a BSc in human biology for 3 years; second, a clinical training period of 2 years; and third, a period of 2 years of apprenticeship training with responsibility for a limited number of patients. At the present time the degree is awarded after 6 years, but registration to practice outside a hospital is only granted after 7 years in New Zealand (Figure 1).

First Year

The first year consists of subjects similar to those taught in the first years at college, with biology, including a course on

MEDICAL CURRICULUM

B. Sc. (Human Biology)		3 years
Clinical Course		2 years
Apprenticeship Training		
	Pre-graduation	1 year
	Pre-registration	1 year

Auckland, N. Z.

FIGURE 1 Medical curriculum, University of Auckland.

ultrastructure of cells, physicochemistry, and behavioral science. During this first year, six visits are made to hospitals where students see the application of chemical methods in patient diagnosis. These visits have included observing automated biochemical equipment, seeing the equipment and techniques used in radioisotope investigations in medicine, and studying the management of a severely injured patient, which has included a visit to the blood transfusion laboratories and the respiratory unit. These visits, in groups of 20, are intended only to stimulate, not to educate. Throughout the five years of the medical course, the Dean's weekly lectures provide medical students with an opportunity to hear people from all walks of life discuss their experience and attitude to life.

Second and Third Years

During the second and third years, while behavioral science continues, physiology, biochemistry, anatomy and pathology are merged to produce a single curriculum closely interwoven in which students are taught and will be examined in human cell and tissue biology, biology of organ systems, the neurolocomotor systems, homeostasis, and human reproduction and development.

Despite the fact that this is a Bachelor of Science program, a monthly clinical correlation session will be held during the second and third years to demonstrate the implications of disordered structure and function of the body. The family growth and development study, to which I have referred earlier, will extend from the second to the fifth year of the curriculum, and although it is similar to that introduced at Cleveland, it differs because students initially will be studying normal physical and behavioral development, and the observations made in these field studies will be the raw data used for laboratory exercises by both the anatomists and the psychologists.

In 1972 when adequate buildings and facilities are available, it is intended to admit 100 medical students and up to 50 science students to the BSc course in human biology, who do not intend to continue with the clinical part of the course.

It is likely that we will have three avenues open after the BSc in human biology to avoid the wastage which so often oc-

Bachelor of Science

(Human Biology)

1st year

Biology
Physico-chemistry
Behavioural Science I

2nd year

Human cell and tissue biology
Biology of organ systems
Behavioural Science II

3rd year

Neuro-locomotor system
Homeostasis
Human reproduction and development
General pathology
Behavioural Science III

Auckland, N. Z.

FIGURE 2 Bachelor of science; first, second, and third years, University of Auckland.

curs in British universities where people at the end of three years retire without any qualification. Graduates can then move into paramedical fields such as social work although the number of opportunities available in New Zealand is relatively limited. They can continue for a further year in one of the disciplines of biochemistry, anatomy or physiology and then start a PhD course. Third, they can continue with the clinical training program (Figure 3).

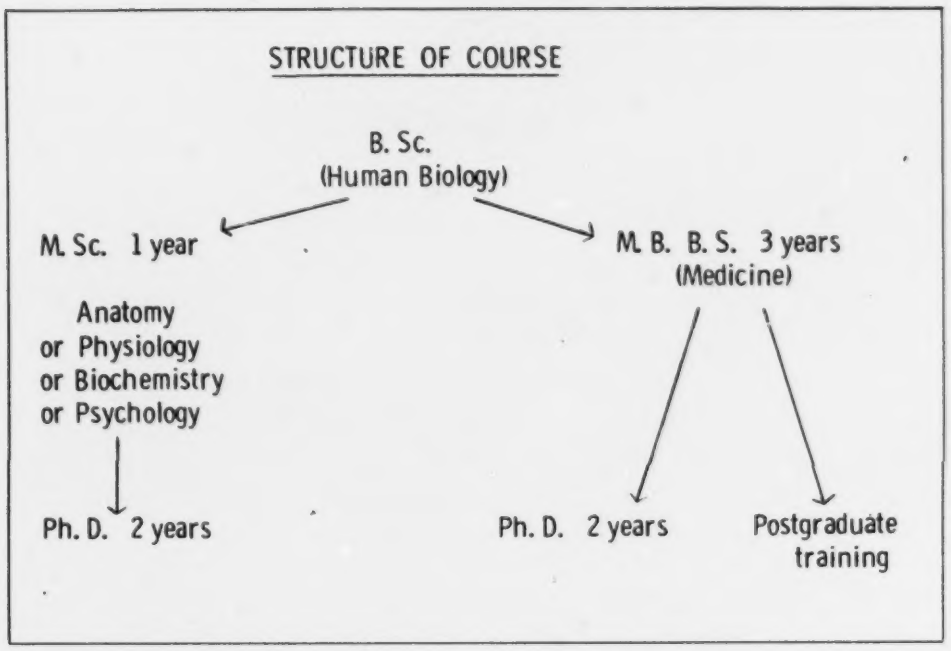

FIGURE 3 Structure of course, bachelor of science (human biology).

Fourth and Fifth Years

During the two clinical years, it is intended that teaching will be interdepartmental and directed toward organ systems, with mingling of medicine, pathology, surgery, and pediatrics. It is not intended to concentrate solely on topic teaching and students will be given responsibility for the admission and supervision of patients in the wards at this time.

Sixth Year

One of the major objectives of the School of Medicine in Auckland will be to merge the sixth, seventh, and eighth years (which are, respectively, pregraduation, preregistration, and postregistration) into a single comprehensive basic apprenticeship and training period. This should provide sound opportunities for training the general practitioners, which we expect in a modified form will be needed in the future; also it will enable physicians and surgeons to start training in the field in which they intend to practice.

One of the major problems we shall face in Auckland is the effective integration of this three-year period so that the university retains an influence and responsibility for this phase of training. At the present time, the Medical Council of New Zealand, not the University, assumes responsibility but has little capacity to supervise training during the seventh year. We have appointed an Associate Dean for Graduate Studies with the specific intention of involving the University more in this period of apprenticeship training, and I believe that an integrated three-year period here offers the best hope for vocational training in New Zealand.

It is relatively easy to define the objectives of a new medical curriculum, as has been done recently at many universities. Nevertheless, while it is essential to define objectives, a school will be judged on its accomplishments rather than its objectives. We are in agreement with the proposed concept of teaching a core curriculum in a limited time, using coordinated interdepartmental teaching and increasing the use of elective courses designed to explore selected subjects in depth taught on a departmental basis. With the limited resources of medical manpower available to the faculty in Auckland, we will have to be content to move slowly toward a wider use of elective time. Initially, we intend to offer electives during the third year of the BSc in human biology. These electives will be in selected aspects of biochemistry, physiology, pathology, or behavioral science. Similarly, during the sixth year of the course, a substantial proportion of the year, as rotating assistant house physician, will be elective time, when students will have the opportunity of working with specialty groups in medicine with which they expect to be associated in the future. It is intended that the students should select the fields in which they will be working for half the year.

I should mention that in Auckland in 1967 we had a total of 2,200 beds available for 300 clinical students, so our resources appear to be substantially greater than those available in France for clinical training (Figure 4).

In all faculties in the universities in New Zealand, entry is free except into medical school. At the Otago Medical School, competitive entry has been at the end of the first year of university. In Auckland, we have tried to select students directly from school, which has presented some problems. Selection is based primarily

RESOURCES IN THE AUCKLAND HOSPITAL BOARD AREA

(1967)

Population	636, 000
Hospital beds	2, 200
Hospital admissions	55, 771
deliveries	4, 034
Extramural hospital services	
Patients attended	30, 418

FIGURE 4 Resources in the Auckland hospital board area.

on a national examination without discrimination between subjects, supported by an interview. A person can attain high marks in French, English, and Spanish and obtain entry to the medical school.

In our medical students, we have a very stimulating group of young men and women, and the competitiveness that occurs in Otago, where they have been striving for a limited number of places, has gone. There is a great deal more willingness to help colleagues, which is encouraging.

The small class-size has prevented the feeling of remote disinterest which is common with many junior students in New Zealand universities. I am sure in the future we shall face some of the problems that concern you today. Student representatives already sit on faculty committees and the senate of the university.

I hope that the 7,000 miles of ocean will, despite jet travel, defer the arrival of this present wave of unrest until the School of Medicine is established and able to answer, in some measure, for its own shortcomings.

Julius R. Krevans, presiding

DISCUSSION: ORGANIZATION OF MEDICAL SCHOOLS

KREVANS: I should like to start this afternoon with a discussion of the presentations that we have not had an opportunity to discuss so far.

PFEIFFER: I should like to ask Madame Escoffier-Lambiotte: Don't you think the point you brought up regarding the concentration of medical education around Paris is a specific French problem? It is the problem that all the doctors want to stay in certain areas and aren't willing to go to the countryside? That won't be solved by a change under the government's prescribing where the doctor must practice.

From what I have seen in the developing countries, it is all the same. The doctors who have come out of Egyptian universities are concentrated around Cairo. Indian doctors concentrate around Bombay, New Delhi, and Calcutta. All over the world, it is the same.

I suppose also in the South American countries, the doctors want to concentrate in the Lima area and not go into the mountains. What can you basically do if you now have changed the old system and have gotten rid of the professorships and everything and have instituted departments? What are you doing unless you are not enforcing the distribution of education in general in France to the different towns and areas outside Paris?

ESCOFFIER-LAMBIOTTE: There are two problems. One is the distribution of doctors between the cities and the country. That is an international problem that is difficult to solve. Another problem that is more specific to France is the fact that, as you noticed, all our research centers, libraries and university faculties are centralized in Paris. That is not a good thing, and that is not right, historically speaking.

The oldest faculty of medicine in France was Montpellier, then Toulouse. Something must be done and can be done to obtain not an equal representation but, at least, a more important number of centers of knowledge and of research, and that must be done. That is why the

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government, for 10 years, gave much more money to the provincial research centers than to the Parisian ones.

It is a very dangerous situation on account of what I told you of the mandarins. They named their assistants only in Paris and around Paris. Actually, a man not named in Paris feels it is a dishonor, and it is not right. I don't see why it should be. It is an honor to be a great biologist or an important specialist in Toulouse, which is a lovely city, or in Lyons.

It is a fundamentally historical phenomenon dating from Napoleonic centralization, but it is not good.

PFEIFFER: Unless you cut down the number of educational institutes and institutions in Paris, you are not going to improve the situation.

Now, instead of one medical faculty, you are going to have ten. It is an old law, learned from industrial developments, that if you have a big body and you divide that body, then the efficiency of the following, different institutions will be much better than that of the big one. There is a certain size regarding a factory. I can give you an example.

There was the I. G. Farben complex, which after the war was split into four parts. Already by now, Hoechst Pharmaceuticals is producing more than I. G. Farben produced, itself. Therefore, the splitting into four parts–they never will reunite afterwards–has produced much more production than before.

Similarly, you have ten faculties in Paris. Don't you think at the moment in which they are successfully working, they are attracting many more people than one faculty would have done before?

ESCOFFIER-LAMBIOTTE: I don't think it will be so, because the result of the revolution has been very severe for the faculty of medicine of Paris. We had one faculty with only one dean. Now, we have to improvise ten faculties with a split group of professors, whereas some provincial universities kept their previous structures all through the revolution with some kind of common work between the teachers and the students, which is extremely important because they are now, for example, in Marseille building a reform together. In Paris, one could not honestly say that the reform is built through some kind of cooperation of teachers and students. It is much more dangerous.

It is my feeling that one of the consequences of the May events will be, for at least 10 or 20 years, the growth of the provincial faculties.

KREVANS: You think one of the effects will be growth of faculties in other parts of the country?

ESCOFFIER-LAMBIOTTE: I hope so.

KREVANS: Without pursuing the whole health manpower question, which would take another conference, I think this is a legitimate part of educa-

tional reform. There is no question that if you locate the major educational units all in one place, it will serve as a focus to increase the concentrations of physicians in that area.

CHIAPPO: I should like to comment, Dr. Pfeiffer, on a question about the concentration in South America.

In Peru we have six faculties of medicine. Two are in Lima. The other four are in other places. We don't have this concentration of faculties of medicine in Lima. In spite of that, the concentration of physicians is in Lima. There is no correlation, therefore, between concentration of faculties and concentration of physicians in Peru.

I think there are other problems in developing countries. There is the problem of the kind of medical education with which we deal. We must change that. For instance, I belong to a private school of medicine, and we are located near Lima, in a community of 600,000 inhabitants who come from the rural part of the country. Our program of community medicine—and I think Mr. Arregui will speak more about that—is to encourage the students in a different way.

We have had in our university a movement of the students to go to the highlands, to go to the Indian communities. This is a complete change in the young people—to ask of the faculties a different kind of teaching in order to be prepared for handling health programs outside of Lima. It is a change in our actual pattern. But in the developing countries, there are other problems.

A physician is a product that requires a standard of culture to take advantage of the existance of the physician. If you have a country where the average education is two grades primary level and the prevailing confidence in the practitioner is in witches and a lot of superstitions, the physician is not called into attendance, nor does the physician have the modern tools to act in this community.

First, we must change the structure and aims of our medical education. Second, we must change the structure of our socioeconomic society. These are the results of the student unrest.

ZELTER: I should like to go back to the point about the problem of the size of the medical schools either in Paris or elsewhere in France.

If you want to have different spots where reasonably good medical education is given, you have to create incentives to make people move. What happens is that in today's system, you go to the university that is the nearest to your home. There is no real ability to move to some other university, unless you want to go from one small university to another small university.

It was, I think, decided several years ago that no more students would

be allowed to come from the provinces to Paris University, and it didn't make any difference because most of them would remain in the area where they had gone to high school. There is no real need or want among the students to move from their birthplace, and this is a big problem.

In the United States or in England, you choose your medical school either on technical grounds, because you think this one is better than another or just because you have been chosen by that medical school as being apt to go there.

In France, there is no such problem. There is no selection policy of that type that makes people move around and go from one place to another. It is also part of our general social organization that makes people remain in their birthplace, and it is the type of culture and social behavior that you have to check if you really want the authoritiarian weight of Paris to be broken down.

MacLEOD: I should like to make my comment in the form of a question. This relates to what Dr. Chiappo had to say this morning and also to some of the other comments that have been made since.

I wonder how influential the process of medical education, during the students' years in the medical school, is in determining what his life style is going to be? It seems to me, we are putting a lot of emphasis on the medical education period as determining whether or not, for example, a student will be interested in community medicine, whether he will be interested in scientific medicine, or whether he will practice medicine in the country or in the city. There is an old American song that dates from the end of World War I, which I think puts this in a nutshell.

During World War I, for the first time many American boys from the Midwest and from the farms saw the world, and the song goes: "How are you going to keep them down on the farm, now that they've seen Paree?"

This is the problem in a nutshell. Once students see the opportunities for living for themselves and for their families, for their intellectual growth, for convenience in their way of life in the urban setting, this is where they are going to go. I don't think what we do in medical school is going to change this. I think we can be as evangelical as we wish about social responsibilities, but if they can't discharge their social responsibilities effectively, and if they can't undergo intellectual stimulation and growth, they are just not going to such places willingly.

We are trying to put simple solutions on very complex phenomena and I think it is a mistake.

MILLS: I should like to ask a question of Dr. Chiappo. He was saying there is a great deal of student and faculty unrest in Peru. I was wondering if he had any indication of what student unrest leads them to do? Are the stu-

dents corrupted with bourgeois ways, or will they go to the highlands, lose status, and sacrifice something?

CHIAPPO: I think that your question is very interesting. When you ask the question, you have the answer also.

I think that in Latin American countries, and in Peru also, the faculty *rest* is evident because of many reasons. This is not a justification. It is just a description.

We have not had in the past the professor who is completely devoted to the university. We have just a very brilliant man, who is acting outside a university, and who comes to the university to have just an honor but is not devoted. But we, in our country, are building, little by little, a force, a trend of full-time professors, young professors who I think are as beset with unrest as the students. I think this provides hope of breaching the gap between the goals of the students and the goals of the teacher.

Last February, the Peruvian government presented a new university law, which completely changed the structure of the universities. This law is a little bit connected with the French law. What happened is that the conservatives are taking the saucepan by the handle, and this is very dangerous. I hope that, in spite of this deep reform that is expressed in student claims and student demands, we are going to have for a little while longer the influence of what I call paleocephalic (old-minded) professors.

KREVANS: Professor Querido?

QUERIDO: I should like to support what Dr. MacLeod said. I think we should bear in mind in our discussions that we are talking about two themes which are in conflict at the moment.

Whether you look to the developing countries or the sophisticated countries, the big change in our thinking that came in the past 30 years is that medicine is not a charity but a utility of society. Now, as soon as you come to the utility system, where everybody is entitled to have his needs met, you can't leave it free. You can't leave it to a transport system to choose its route, but you have to define its function. If you haven't recognized that medicine is a utility, you don't solve the problem by changing medical education in some way and hoping that people will follow what they have gotten in their education. You will have to direct them to specific functions.

I know a bit about India because I worked there. The mistake India made was in copying British medical education by multiplying the number of medical colleges without having enough teachers, and turning out doctors who flock to the cities.

If they had made medical assistants, who in a caste system could only find places as medical assistants in the rural areas, they would have given

the country medical care. Designing an educational system for supplying medical care makes it necessary to know how much per capita the population can make available for medical care.

If the first $5 per capita is only for the sanitary system, then you have to think of how the next $5 will be spent. We have to accept that medical care is not charity but is a must and a utility. As soon as one comes to that conclusion, you can't let the system operate on a laissez-faire basis. There are many ways to design a system of medical care that will limit the choice for people trained at different levels, without affecting personal freedom.

KREVANS: A number of questions could be brought up that relate to curriculum, which a lot of the speakers talked about this morning. But rather than go into them now, I think it might be well, perhaps, to let some of the questions remain unresolved until we hear from the students; since one of the main reasons we have gotten together is to see what the effects of students and their beliefs are on reform in medical education.

As to the question of health care systems, someone described the health care system in the United States as follows. If we built automobiles the way we run the health care system, everybody would go out and buy their own bumpers, fenders, wheels, spark plugs, and put it together at home. That is basically how the health care system works in the United States in contrast to the way we make automobiles. Maybe there is some virtue in it, but it wouldn't make very nice automobiles.

At any rate, I think this would be a very good point to start the presentation of the next part of the program, which has been broadly titled: The need for reform of medical education as seen by those undergoing it.

The first speaker in this group will be Mr. Alberto Arregui.

THE NEED FOR REFORM OF MEDICAL EDUCATION AS SEEN THROUGH STUDENT EYES

Alberto Arregui

Society is in a period of significant change. In no other time have these changes been so urgent and meaningful in all of man's activities–scientific, technological, social, and political. Old, established ideas and methods are in a continual state of reexamination and reformulation. Man and society throughout the world are in a condition of revolutionary change, and it is no longer a question of whether the revolutionary changes can be achieved and whether the majority wants them, but when and in what form will they take place.

It is within this social frame that the aims and goals of medical education have often been questioned, and a bewildering variety of solutions have been produced, but changes in medical schools have followed much more slowly. This has been explained as due to the precarious economic situation of most medical schools, a fact that has limited the schools' development and many times has threatened their viability; but it is also true that the slowness of the changes in medical schools has been due to the lack of commitment and conviction of students and faculty towards the goals of medical education which, as defined today, imply changes in attitudes and organizations that could enforce radical changes and exacting demands upon the medical profession in the next years.

If men have by nature the right to good health, and by social circumstances the right to health care, then the duty of society is the protection and restoration of the health of human beings prior

to any other consideration. The implications of this statement are staggering and extensive. They affect society as a whole, insofar as society, through its elected rulers, can decide what part of its resources it will allocate to this need. But it also affects medical schools directly, because they have the responsibility of training and educating physicians, planning and doing research, providing direct and indirect patient care through their teaching hospitals, and being the ideal source of information from which society can realize the importance of health and health care.

The protection and restoration of the health of human beings rests upon a number of fundamental points. These include the standards of living generally, nutrition, pure water supply, safe sewage disposal, and others. These public works, however, are not a substitute for the preventive, curative, and rehabilitative personal health measures which depend upon physicians and allied personnel. Thus, medical schools are crucial to the further development of health services, and the education they deliver should be oriented in this way.

Medical education is usually said to be dependent on teaching, research, and patient care. Though these interact, the problems of emphasis and balance have raised difficult questions for which precise answers have not always been available.

There has never been doubt that education, research, and patient care can provide with their goals a common ground upon which medical schools and hospitals can unite in close association. It is the problem of finding the satisfactory balance that has been the cause of uneasiness and frustrations. The suggestion was then made that a fourth goal be added to provide greater understanding and stability—the goal of community service. This was viewed as being different from, and larger than, patient care, it being understood, of course, that patient care, research and education are also forms of community service.

By community service was meant a willingness on the part of the medical school and the teaching hospital to take its proper place in the whole range of health services needed in the community. It was intended to mean what has often been termed "readiness to serve."

The implications of the above statement are many. It may mean a well-organized hospital with good medical services; it may

mean the construction of neighborhood clinics; or it may mean what our school is aiming at, that is, the community-university campus which would include not only health services but also facilities for the community such as experimental primary and secondary schools, technical and artistic centers, institutes for studies of social security, nutrition, family training and planning, plus the housing facilities for students, interns and staff. It is here that the student could have the opportunity to experience not only the clinical manifestations of man, but also the emotional, intellectual, mystical, artistic, temperamental properties and other capacities of man as an individual and as a social animal.

The ultimate objective of this program has to be, I believe, the socialization of the university, the socialization of medical schools, and the socialization of medicine as a profession. It is towards these goals that the reforms of medical education have to be directed.

Universities play a larger and larger part in society and in the economy in particular. They have a monopoly in the intellectual training and in the research that, in a way, conditions any economic development today. This means that the whole economic system will take more and more account of the university, and that it will try to have a more and more direct influence over it. Against this, the university will have to fight. Our interest in health and in health services, as a force in the development of our country, is based upon the recognition that health is a vital national concern, not because of the relation of health to productivity, but because of our notions about human rights and human dignity. It is in the universities—educational and socioeconomical systems—rather than in the country at large that important changes are to be looked for.

It is relevant in this context to recognize the importance of preserving and enhancing the potential of the individual university and, in this case the medical school, for self-determination, so that each may be free to experiment and innovate along the lines best suited to its own resources and commitments.

Medicine has defined its role in society—community health service. It is now that one can attempt to structure medical education so as to allow the student to apprehend this end. It is necessary then to have: (1) an adequate preventive and social

orientation of medical education, (2) an adequate knowledge of our nation's medical and socioeconomic situation, and (3) an understanding that a decentralization of professional medical practice is a requirement in order to achieve this goal.

The first two statements, which elicit a change in attitudes, are being met by including in the medical curriculum courses like sociology, anthropology, economics, and demography, and making these extensive and available to interns, residents, and faculty members. The third statement implies a decision consequent to the change in attitude, and it can be produced by a change in the governmental planning regarding health care facilities in the rural populations and by providing them with the minimum of elements for good professional practice.

The goals of medical education are twofold—to produce physicians responsive to the health needs of the people of our country and competent in their chosen area. But if the specialist is not taught enough about society to understand of what it is that he is a part, then the quality of medicine will further suffer. He runs the risk of being demoted to the status of a technician, skilled perhaps, but still relegated to a minor role.

In moving toward the teaching of community medicine to the future physician, what is really being decided is whether medical men can be given this broader background, no matter what their ultimate specialty. We understand and very often desire that the individual professor be dedicated to his research and training, but it is regrettable, if not unforgivable, for teaching hospitals affiliated with medical schools to be less than fully aware of their broad responsibilities toward the goal of community service. Fortunately, they will not all be alike. Some will be drawn more toward one area than another. It is hoped that all will learn of this new medicine, and that there will at least be enough of those accepting full leadership so that physicians can eventually have their full say and influence in the negotiating with the nonmedical parts of our society that will be necessary in organizing our medical care.

Our medical school has accepted the task of training these medical leaders to whom must be entrusted the solution of the medical problems of our country. As students, we are not struggling for power, but we are demanding coparticipation in the responsibilities of achieving the goals of present medical education.

Our efforts have been in the past five years (1) to stimulate an open dialogue with the faculty in order to analyze the means and ends of present medical education; (2) to promote seminars, lectures and conferences dealing with our nation's main socioeconomic, educational, and health problems (these have been published by our school); (3) to participate actively in summer programs in rural communities where medical and anthropological projects were carried out.

But this has not been enough. A conclusion common to all these studies was that there is an imperative need for rural health care in our nation. This can no longer wait, and perhaps a very positive demand of the students is that a rural internship prior to the regular internship be institutionalized as a requirement for the medical degree.

We are aware of the difficulties that we will encounter in trying to achieve these objectives. Part of our teaching body is slumbering in intellectual sloth, lacks imagination, and insists on changing nothing that might overthrow their habits of thought and their patterns of work. Someone has said that they are the infuriating symbol of a materialistic and chauvinistic society with enormous power but without a soul, a society so closed upon itself that sometimes only violence can hope to make any significant changes in it. But, in essence, we are not violent. We believe in the open dialogue, and it goes on, but sometimes it is the dialogue of the deaf—between those clinging to the old, established ideas and those "few chimerical spirits" who are willing to deliver excellent health care because they feel and know this is their commitment.

To deal effectively with today's and tomorrow's problems, medicine must learn how to organize around the patient and his family, must concern itself with his social needs and his relationship to society. Medical problems in the next 20 years will, to a large extent, be fought by dealing with economics and politics, by fighting the deficiencies of society itself, and making the necessary changes.

These are some reasons for the student desire to reform medical education.

Thank you.

KREVANS: I will accept the pleasure of the assembly. Why don't we go ahead and hear the others and then we can have a wide-open discussion? The next speaker will be Mr. Stephen Mills of McGill University in Montreal.

Stephen Mills

Mr. Chairman, ladies and gentlemen: I attend McGill University, and I think the environment in which this university finds itself is quite unique. I should like to go into a bit of background about how it came to be where it is now.

McGill University is the major English-speaking institution in the Province of Quebec, 85 percent of the population there being French-speaking. Quebec accounts for approximately a third of the population of Canada. Recently, over the past two years, there has been a great deal of unrest in the Province of Quebec as to the future role these French people will play within the structure of Canada if, indeed, they will remain within the structure of Canada. This has very recently forced the university to define its role in society and to justify itself publicly to the people of Quebec.

Students enter McGill after finishing high school. They are generally about 16 or 17 years old when they enter college, which is younger than their U.S. counterparts. They go through approximately four years of undergraduate education to get a Bachelor of Science degree. They enter medical school at approximately 20 years of age and go through a regular and what would be considered, up until now, traditional curriculum, which involves the regular subjects in corresponding years. They then do a one-year internship and most go on to specialization.

McGill has traditionally been considered a cosmopolitan school. Students attend from all parts of Canada, the United States, and British Commonwealth nations. Last year's freshman medical class comprised 125 students, including 20 from the United States, 15 from the British Commonwealth, and 10 people who are Canadians but nonresidents of Quebec, as such. Approximately half the faculty itself comprises people who originally were non-Canadians, including the Dean of the Medical School.

Again, McGill is an English-speaking institution in a predominantly French-speaking environment.

Student concern over medical education at McGill is in the process of rapid transformation. Prior to 1968, students at McGill took little active part in determining what course their teaching would follow. There existed an informal student curriculum committee, but a formal mechanism for dialogue between individual departments and the students was lacking. It was decided that the curriculum program should be a function of the Medical Students Society. Under their direction, a chairman was appointed and a committee was established in the first-year class. The first-year class had representatives contact each of the department chairmen involved with the teaching program and meet with them regularly concerning the teaching. They are now preparing questionnaires based on the students' point of view as to the evaluation of both material and the method of presentation of the courses.

The same thing has been done in the second-year class, and we have found wide support among both students and faculty in doing this.

More students are now becoming involved in the Curriculum Committee's activities, and we are currently involved in obtaining representation for each of the clinical rotations. This representation is an excellent method of obtaining immediate feedback on views and of straightening out problems that arise during the year. Previously, many students had felt that much of what they were taught was unavoidable and, as a result, they were apathetic about considering the possibilities for improvement.

On a more long-term basis, students are now participating on several faculty committees concerned with the introduction of new teaching programs at McGill, the evaluation of students, and the role of the faculty in community medicine. In the majority of cases in which we have approached faculty members for representation, we have been well received. Indeed, only the lack of student interest prevented these advances from being instituted sooner.

Beginning with last year's freshman class, a new curriculum was initiated at McGill. This curriculum was both originated and implemented by faculty.

The academic year was divided into four quarters of ten weeks each. Material previously covered in the first two years of the old curriculum is now done in the first year and one half. The last

quarter of the second year and one quarter in each of the third and fourth years is now elective time. Previously, students had a four-week elective period in the third year only. The third quarter of the second year is used for clinical teaching as an experimental session on integrated teaching. While departmental teaching remained as before, the new curriculum provided for clinical sessions that correlated with material then being covered in each department. These sessions often involved patient presentations and, on occasion, involved hospital visits. In addition, a behavioral science course was initiated.

However, the new curriculum made little change in approach to subject matter previously taught in the traditional curriculum. I think that this is one of the main points from which student unrest and the desire for reform originate. While all departments had formal teaching time reduced to make room for the increased elective time and the behavioral science course, they merely squeezed harder to get the same amount of material into their reduced time allocation.

There remained a basic lack of interdepartmental communication with resultant duplication of material and nonsequential teaching of subject matter. Students appear to be the only ones aware of repetition.

Many of the students entering McGill's Medical School have an excellent background in most of the subjects taught in the first year of the course, including physiology, biochemistry, histology, and microbiology, and yet they are required to repeat similar courses. Advanced standing cannot be obtained nor can more advanced courses be substituted. The emphasis in many courses is misdirected. Mastery of all the facts merely requires a text and adequate free time. A dynamic approach to the study of disease is still lacking at McGill. Departmental autonomy, as it currently exists, would appear to me to be the main block to this. The clinical setting demands that a student be able to think in a logical manner in his approach to the patient, yet the basic sciences do not train him with this in mind. Seeing the basic sciences as a hurdle to be gotten over before entering clinical medicine is a view held by too many. A continuum between the two is needed.

The second-year class, of which I am a member, has now finished integrated teaching sessions on coronary artery disease,

chronic renal failure, respiratory disease, shock, diabetes, and transplantation. These sessions are being variously received, the students' main complaint being that the material presented is too often a repetition of material covered on a strictly departmental basis. I feel that the integrated teaching is extremely valuable and has a much more important role to play in the evolution of curriculum at McGill. The well-worn concept of core curriculum is now under active consideration by several combined student-faculty committees.

It is becoming more apparent that by utilizing integrated teaching, the matter of finding a core is facilitated. The idea of having material presented several times in order to ensure comprehension is obsolete. Today's students are both better prepared on entering medical school and are capable of learning more than they are generally given credit for. Surely, it is obvious that material presented once and with relevance both to the clinical setting and related subjects is a far better method of teaching.

Now this is one area in which students have been agitating and have been working with the faculty. In all cases, we have been working *with* the faculty. It is generally not felt valuable to go out and set up student committees and pass resolutions. We would rather do it once with the faculty. This has generally proved to be more constructive.

The area where a great change has come over students at McGill is in the field of community medicine. This has also only started in the last two years and is perhaps the most significant thing that happened at McGill's Medical School.

Students entering McGill for their first year are exposed to a vast spectrum of specialists and I think that by the time they finish the first year they have pretty well decided that the only way to be successful in medicine is to become a fellow and practice in a large teaching hospital, and only very rarely do you come across a student who holds a differing view. In fact I believe that approximately 98 percent of McGill students go on to special training in the hospitals and to an advanced degree.

The Student Health Organization at McGill arose initially out of one student's views and his efforts. It has taken on quite a vast scope at McGill and has really shaken the core of the faculty. It caused the faculty to look at what is going on in Montreal and the

health services they are providing and, as I said, this is currently under active consideration.

I should like to read you a paper, a short article written by the founder of the McGill Student Health Organization, Danny Frank, now a fourth-year student, explaining their project—not so much that they had the ideas and did the talking but that they actually acted on it. I think that is what is terribly significant about the whole thing. It has been incorporated into the McGill curriculum as such, so it gained recognition and made a start.

This is the paper.

In the summer of 1967, a group of medical, nursing, and sociology students from McGill University in Montreal met to discuss certain deficiencies in the medical curriculum as could be appreciated from a student's vantage point. As a result of these discussions, a Student Health Organization (SHO) was formed with the initial purpose of establishing a project in community medicine. The activities of the McGill SHO during the summer of 1968 included:

1. The establishment of a community health center which offered total patient care to the community;
2. An alleyway recreation project;
3. A tutorial project involving the local elementary schools;
4. Social animation.

These four aspects of the project have been extended into the winter months and will be described further in this issue.

The *raison d'être* of the McGill Student Health Organization is to produce a vigorous approach to the problems of urban health care, social welfare, and medical education. As students in the health profession, we are faced with textbooks and long hours of study, and are thus afforded little opportunity to express ourselves in a socially constructive manner. The effects of four years of this experience are well documented. Until now, there has been little opportunity within the medical curriculum for training and experience in such important fields as community medicine, community psychiatry, family practice, and public health. Further, we are concerned with trends in medicine which involve the study of diseased organs rather than sick people. Large hospital medical care, however essential, involves a highly technological environment where consideration for the individual patient becomes lost in the swirl of hospital efficiency, specialized services, and emphasis on sophistication. We are concerned with the set of priorities that permits great energy and finance to be expended in the transplantation of hearts and kidneys, when the very community in which the hospital exists has a glaring lack of basic medical care and thus exhibits inferior health stan-

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dards. Many of the people whom we have met in Pointe St. Charles do not own toothbrushes and are ignorant about their use.

The same inequities exist within the sphere of education. The children whom we have tutored cannot multiply six times seven, nor can they look up a name in the telephone book. This is after five to seven years of elementary school! How are they to function in high school or compete as adults in an increasingly competitive economic society?

Lastly, we feel that the approach to poverty, which involves the sole use of charity, is inadequate. It is our opinion that individuals and communities must be directly involved in the improvement of themselves and their social conditions before any lasting beneficial effects may be had. The simple offering of services to a poor community, without that community feeling both responsible for, and justified in their existence, represents in our minds an insufficient effort.

A brief word about the community in which our project is located. According to the census of Canada, 1961, Pointe St. Charles is a low-income district located in southern Montreal between the Lachine Canal and the St. Lawrence River. Of the 25,000 people living there, approximately half speak French, and the other half, English. The average rent paid in the district is between $38 and $50 per month, and the average income for employed males is $3,312 per annum. Large families, crowded dwellings, and lack of sanitation and nutrition are apparent. There are many recipients of public assistance living in the area.

Out of 1,080 school children living in one of the census tracts, 900 were in grade school, 172 in high school, and 8 in university. According to several principals, teachers, and a committee of professionals studying education in Montreal's inner-city schools, there is an 80 percent drop-out rate in high school. Significantly, there is no high school in the district, nor are there any bus service provisions besides public transportation to the district high schools.

Medically, there are only four general practitioners located in the area, none of whom maintains an active full-time practice, and only one of whom lives in the area. This represents one physician per 6,000 people. The Canadian average in 1961 was one physician per 857 people. The signs and symptoms which cause parents to bring themselves or their children to a doctor are more severe than in other neighborhoods, and diseases such as rickets, tuberculosis, pneumonia, parasitic infections, and malnutrition are virtually endemic to the area. The mental health of the community parallels the physical, a known fact in such underprivileged communities. The stresses placed upon adolescents and the fathers of households are particularly acute. Finally, there is no hospital located in the area with available medical or social services.

During its eight-week tenure, the Project in Community Medicine has met with initial enthusiasm and approval on the part of the community, local health workers and educators, and the involved members of Montreal's health professions. We have been asked to sit on the Health Committee of

the Montreal Council of Social Agencies, which is the coordinating and policy-forming body for all of the English-speaking health and social welfare agencies in Montreal. Also, we have been asked to present the topic of community medicine and our approach to it to the Behavioural Sciences section of the first-year medical course at McGill. In addition, the Project has been incorporated by the faculty into the medical curriculum: under the newly expanded elective program medical students may choose the Project in Community Medicine for their ten-week placement in the second, third, or senior year. This development will enable us to have the Project staffed with medical students on a year-round basis.

Quantitatively, we are all projecting ideas that aren't really terribly advanced but lack implementation, and to quantify the number of students involved in such thinking, I can only say it is a growing minority of medical students who feel this way.

If one of the major things that these people have done is expose a lot of middle-class Montreal medical centers to the fact that the whole recognition of disease and delivery of health care is soundly lacking in Montreal, I hope they will have some long-term effect.

Thank you.

KREVANS: Now we can hear from the people who own that third of Canada. The next speaker will be Mr. Zelter from Paris.

Marc Zelter

Mr. Chairman, ladies and gentlemen: As you may have already guessed, the situation in France is tricky because of the old French education system itself. It is hardly understandable to those who are not working right in this system.

On the other hand, medical education has been linked to financial and political problems for years and is still being involved in all sorts of political difficulties that make it difficult to give a fair description of the present situation.

On the other hand, students are no doubt the most delicate and unstable beings with whom our society has to deal at the

present time. In fact, they may well reflect the contradictions of our civilization, which is highly efficient and technically-oriented, on the one hand, and materially seeking new moral credos on the other.

Their unrest and unhappiness may be coming from the discrepancy between the aims and achievements of our educational system, which pretends to form responsible citizens without giving them any responsibilities, and strongly maintains the elite mentality, while its major claim is for democratization and mass culture.

If we are to believe that the university should not be the conserver of society, but the fountain of reforms and evolution, then we must be prepared to change the university picture as soon as we recognize that it does not fit its definition anymore. Otherwise, one may have to face the sort of trouble and upheaval that French universities had to go through this last year.

Our medical universities were almost perfect examples of what happens when traditions are maintained and encouraged for their own sake and for the sake of a privileged minority. The reforms now under way may well appear in ten years' time as a great achievement, for their future depends entirely on the younger generation of teachers and the new generation of students. Students who are already half-way through their curriculum, although they have provided the motive power for such an evolution, are mostly all conscious of the fact that they have already been marked by the forms of education previously given and that their ways of thinking are still too much oriented toward the individualism and corporate interests that characterized so much of our French society and our universities for centuries.

Whatever the students said loudly about the reform law, there is no doubt that, not so loudly, they knew it was a very positive move toward the utopian university that we are all seeking. All their major claims are given careful and reasonable attention. Thus, one has to explain why so few came up to vote for their representatives at the joint management councils.

The vote, indeed, soon appeared not as really meant for electing representatives, but to show by huge participation that the government was backed by the academic community so that it could justify its attitude.

The students were not prepared at all to do this, for it was that precise government, they thought, that was responsible for the decay of medical universities. The students had not known any other curriculum. They just could not make a pretense that the government was backed by the academic community. This explains their reluctance and hesitation.

In fact, the Minister of Education had no choice but to enforce his law by moral pressure and by what was called a "stick and carrot policy." For it was the university's very existence that was threatened, if the students did not show up, by the growing pressure of the nation's unwillingness to pay attention, and to pay taxes for those very students that were pulling apart its very traditions, achievements, and moral credos. Where great psychological skill was needed, where gentle persuasion and time were needed, political implications just meant that the odds were not to be on that side.

We knew also that since the academic and hospital hierarchy and structure principles hadn't been changed, we were not likely to have the opportunity for ruling the medical center jointly with some of the more conservative members of the medical profession. The results of the elections proved to be even more disappointing than expected.

The three major issues the student representatives had been citing were: First, the creation of multidisciplinary universities, gathering all the branches of medicine, including paramedical schools and as many branches as possible of the behavioral sciences, including sociology colleges and some basic science colleges as well, in order to create places where the matter of human health could be studied as a whole.

Second, *the definition of a new type of medical school and the role it is to play in community medicine.* Students believed in the creation of regional medical centers not only involved in medical care, but also in a regionally-planned health policy, defined by the community itself, that would provide not only better health standards but also new opportunities to train students for their active life.

It would create badly needed links between the general practitioner and the teaching hospitals, thus making a postgraduate teaching policy workable and well accepted by all.

Relationships between all members of the medical community

could hopefully change for the better if the gap between our two types of medicine could be reduced.

The backlash phenomenon that has stricken the medical community makes such changes unlikely in the foreseeable future.

The first challenge for the reformists, the professors, scientists and students alike, is to unite and to prove that the teamwork type of medicine is not out of their reach. On the student side, the division is still great, and the old unions did not survive the shaky days. Corporate and local problems often overrule a sincere will to wholeheartedly support new concepts.

The reformists profess that they are willing to help promote better medical education, but many of them belong to unions with well-known political involvement.

There are also a few outstanding personalities that are well known both for their medical achievements and their sound ideas on medical education. If these men would take the lead and help promote the creation of an association such as the British ASME (Association for the Study of Medical Education) it would undoubtedly be a first move that could gather all the willing individuals, thus transforming scattered people into a powerful and hopefully effective body, counteracting the weight of the conservatives.

The third point of the students deals with the curriculum itself. The new curriculum that has been laid down is by no means original. Once again, as if we cannot escape the old French devils, it is designed to be applied on a nationwide basis, and curiously enough, these very men and students that were supporting university level independence in matters relating to teaching are not doing it now. This means that the local attempts here to improve the curriculum will not be actually possible without putting into work again the legal machinery, a move no one would dare to do for obvious reasons.

Furthermore, it is not clear yet what this new scheme is to be. The next ten years will tell. It owes much to the student White Book that gave the general principles of what was expected by them.

Orientation periods and high flexibility characterize the undergraduate education. New systems of credits have been developed that should encourage the student to take courses in long-neglected disciplines, such as psychology, neurology, or languages.

Higher standards have been set up for those who already want

to take an academic path as part of a new biological curriculum. That is already being praised by all as quite an achievement in a gloomy situation.

It is understood that this undergraduate period is also a period that will open not only on medicine, but all paramedical careers, depending on each individual's abilities.

The basic medical education that follows should consist of integrated teaching, a notion introduced by the students, which met neither passionate resistance nor enthusiasm from the medical profession. Integration should not be an aim, but a means toward a goal to be attained, and that has still to be defined.

As the precise terms of the curriculum are not known yet, it is not worthwhile to discuss here what ought to be done. I believe, from what I know, that there is not much difference between what French and other students are seeking, whatever curriculum or pedagogical methods are concerned.

The report on medical education made by the British provides a fair amount of what is found in France. The major breakthrough and achievement of the student revolution lies in the clinical training that is now compulsory and involves true clinical responsibility in the long run for all. All students from the third year on have to be on duty in the wards six mornings a week, taking histories and learning the basic medical acts for a start, and then gradually making examinations under the chief resident's supervision.

After a training period of one year, they are considered members of the hospital staff, which means that what they get depends on the hospital administration, and they get an average salary of $50 a month. This applies already to nearly 10,000 students.

It is currently admitted by the administration that a ratio of six beds to one student is a minimum. It means already that the so-called second-class hospitals will have to be opened to students, thus helping them improve their standards and breaking down the old concepts about a dual-level medicine. It may prove to be a powerful tool to instill a new concept of medical education, since the medical staffs of these hospitals are willing to take part in planning the curriculum and show more enthusiasm about it than many of those who are officially in charge.

It may help these hospitals find full-time doctors, as most of them are now still part-time, ten years after the Debre reform,

which was supposed to enforce full-time work everywhere in a period of ten years.

So far, very little has been done to send students to outpatient departments, screening teams, and nothing has been done in the field of community medicine, a gap that we should like to fill soon.

In spite of efforts that can be made, students are conscious of the fact that these possibilities are not overexpandable. One must recall that, officially speaking, there is no selection policy as such in France. The only way to eliminate unwanted candidates is through examinations. Up to now, the unique yearly multiple-choice question examinations were the only means of control.

The lack of confidence in human beings, even when they are university professors, is such in our educational system that selection by means of an interview system is unthinkable. This led to two consequences. Very little confidence was given to the system, and it was driven to an incredibly complex system of competitive exams, leaving behind as second-rate doctors nearly half of every year's promotion. Now this procedure has been dropped, but it still takes an average of three years to sort out the supposed ideal medical student from the common lot.

To reach a dropout rate nearly similar to other countries, we spend as much on the selection as on the educational process, a luxury we can't afford. What is more, those who are rejected have no opportunity for shifting and must start all over again in a different field. This waste of human technical power could be avoided if disciplinary universities were created.

This is linked, as already mentioned several times before, to the complete rethinking of our health-care formation system and implies that the needs of the nation in the forthcoming years be sorted out. It means also that the nation must be willing to pay for the formation of these new careers.

Medical education attracted few people before two years ago. It had the reputation of being costly and long in comparison to other alternatives. Now that the formation of a graduate takes nearly as long, whatever he is studying, and with the improvements of the living standards, these two arguments have been dropped.

Medical studies look very attractive to many for they offer a

social status very much envied and the certainty of a high standard of living with no foreseeable work-finding problems, together with high responsibilities and an active life. The rate of increase of medical students went up abruptly these past two years, which means that urgent workable solutions must be found.

There are no signs that the nation wants, at the moment, a health policy to be defined and that it is ready to face its difficulty by modifying today's policy of ruling the medical school. Unfortunately, attention to such problems cannot be further delayed without facing the risk of disaster.

The present situation undoubtedly offers a challenge to those dealing with medical education problems. It is often said that everyone involved in medical education regards himself an expert. So far, no experts have shown up in our country, and the only published matter that exists in French is the work of a few students who didn't feel themselves experts, but who, at least, felt concerned and wrote the White Book describing medicine during the May events.

This was quite a new step in French education. These students have raised interest in the medical community, and have managed to obtain more in six months than has ever been dreamed of.

It is true this has been done, though at a high cost stemming from historical and human problems. The men have not changed, and a long and difficult period is beginning now, which could lead to the same results if the same paths are taken.

The hospital structures will not change for some time, and it is not so sure that the students are prepared to go any further than they have already gone, for their backgrounds and attitudes are quite often in full contradiction with the kind of medicine they have been promoting so far. Only the most community-minded among them are likely to carry on this work, and it could well be a long walk in the desert in present circumstances.

The only problem is to know if these medical students will be able to make a difference between the role they have to play in medical education and medicine and health, and the role they have to play in the political life in our country, for the path between these two choices is very narrow indeed.

Thank you.

Geoffrey Lloyd

I should like to make this discussion a discussion of needs in terms of the future, because the future is the important thing.

But, first of all, I should like to give a very brief résumé of the growth of a British doctor, because some may be unaware of just what happens in England.

Consider a little English boy of 11 years. At this age he enters his secondary school. At 13 he may decide that he stands naturally at the end of a line from Hippocrates through Harvey to himself and may embark upon a course of study which includes chemistry, physics, and biology. This terminates in his ordinary level examinations at the age of 16. Between 16 and 18, still at school and still determined to become a medical student, he further studies chemistry, physics, and biology or mathematics, and takes his advanced level examinations at the end. Armed with these A-levels, he enters medical school as a preclinical student.

If he was an eccentric, uncommitted, or ill-informed 16-year-old, he studied some other triad of subjects to the advanced level, perhaps liberal arts, and then at 18 entered medical school as a premedical student. For one year, our premedical student studied physics, chemistry, and biology, then took his first medical examination and thus sailed into the preclinical course as a preclinical student.

In most medical schools the preclinical course consists of anatomy, physiology, biochemistry, and pharmacology and lasts for 18 months. At the end of this time, the second medical examination is taken and our student enters the clinical course.

The clinical course is three years of hospital training, terminating with the third or final medical examination, at which time our hero graduates and is plunged into his intern year.

The basic aim of the exercise is agreed by all: to produce a good doctor. This is a man who is

1. Familiar with all aspects of the health problems of his country,
2. Able to contribute effectively to their solution, and

3. Able to continue to educate himself further and to keep abreast of new knowledge and exploded myths in medicine.

Many problems beset us in this attempt, and I like to consider them under the four headings of what to teach, whom to teach, how to teach it, and how to assess whether you have done it. Each one of these headings must be considered in the light of the future of British medicine.

WHAT TO TEACH

This must be considered in the light of two separate factors: first, the existing and changing body of medical knowledge, and second, the future of British medicine in terms of the distribution of health care.

Our knowledge of the science of medicine is daily increasing, not at the rate often stated, because 50 percent of what is new merely replaces mistaken previous beliefs, a process it is important that every student be made to realize. The art of medicine does not increase.

Not only does the volume of medical knowledge enlarge, but we become increasingly aware of the applicability of other disciplines. In Hippocratic times medicine did not include the subject of surgery. This was added later. Since then, some other additions include genetics, microbiology, psychology, epidemiology, radiology, statistics, and sociology. Others may be expected.

Each time a new discipline has joined the medical throng, it has been forced into the curriculum which has been extended, packed, and repacked many times. Our curriculum has had indigestion for years; it cannot take any more, and one of the most important requirements today is for effective, intelligent curriculum control. Here a problem may be mentioned which will come up again later. Each of these disciplines tends to collect a department in a medical school which in a rather Parkinsonian fashion tends to extract what it can in hours from the curriculum. In this way, a subject with certain aspects applicable to medicine comes to be taught as a whole with all the attendant irrelevancies. To mention just one example, we can consider microbiology. The student and the doc-

tor are interested in disease processes and, therefore, the effects of microorganisms upon the body. We are well aware that the subject of microbiology is far wider than this, including such aspects as taxonomy and biochemistry of microorganisms, but this is of no direct relevance in medical education. However, all too often, we are taught it.

In most of our medical schools, the curriculum needs pruning of much of the obsolete and unnecessary debris. In this respect the subject of anatomy is the popular Aunt Sally, and I think it illustrates the two factors mentioned at the beginning, those being changing medical knowledge and the future of medicine. Anatomy in the undergraduate curriculum has become less important relative to other subjects because of two things. Firstly, there has been a shift of emphasis in our disease concept from the gross anatomical to the microscopic. The modern emphasis in pathology and treatment is on the cell. What is more, the shift is continuing toward the molecular level. If we look to the future, the anatomists are going to have to draw in their horns and give more room to biochemists.

I hasten to add that I am aware that this is fully realized. Second, the future objectives of medical education will not be to produce surgeons or any other specialists, and with this decrease in emphasis on surgical vocational training in the undergraduate course will go a concomitant decrease in the volume of anatomical knowledge required. There is a core of knowledge in anatomy as in any other subject, and this is what we seek for the future.

Thus, we have now moved on to consideration of the future, and upon this will depend the objectives of the undergraduate education, and upon this, in turn, will depend the content of the curriculum. What are going to be the objectives of undergraduate education? Put very simply, and therefore somewhat misleadingly, the choice lies between producing a scientist capable of learning how to heal the sick, and producing a doctor possessed of the basic skills and art enabling him to undertake medical practice immediately. These are two extremes of a spectrum of educational objectives. A spectrum which deserves some examination. At one end, we run a vocational course (I define *vocational* as the fitting of a man to a particular task) and produce a graduate who is a general doctor, with a superficial knowledge of all the special-

ties he is likely to require. Postgraduate training could be taken by some of these in order to specialize. At the other end of the spectrum, we run a core course of knowledge common to all aspects of medicine. The emerging graduates are then obliged to undertake postgraduate training to become competent to practice any branch of clinical medicine. Somewhere in between lies the Czechoslovakian type of curriculum with a core course leading to one of four vocational courses. The emerging graduate can become a generalist or train further in a specialty.

A decision has to be made as to where on this spectrum we wish our educational objective to lie. It, of course, will depend upon needs. Thus a developing country, in need of as many competent doctors as possible in the shortest time, must opt for a curriculum in which training to do a job takes precedence over educating more than superficially in the basic sciences. In a highly developed community, the more esoteric training will be more favored.

The Royal Commission on Medical Education in Great Britain (RC), as was to be expected, decided that the purpose of the undergraduate curriculum was to educate in the basic medical sciences and to give some view only of the clinical practice of medicine. Vocational training they considered to be the function solely of postgraduate training. Thus, our education would become a continuum rather arbitrarily divided into two tiers by the final medical examinations and a change of status from state-supported student to wage-earning doctor. This emphasis upon postgraduate training will raise its own problems in terms of its control, its finance, and the time and opportunity for the young doctors to study.

Seventy-three percent of our students say that they are in favor of such a two-tier system with the postgraduate period providing a course for students of wider backgrounds and varying interests. Those who do not agree argue first, that a doctor need not be an expert in pure science, and second, with more conviction, that the demands thus placed upon the postgraduate years are too expensive and not feasible.

However, we appear to have decided where we are on the spectrum and that the undergraduate course bears the responsibility of educating us in order that we may learn and practice the medi-

cine of the future. Have we any idea what this is likely to be?

Well, it's fun to pontificate. Certain things have become axiomatic. Thus, we will be making far more use of computers in both records and diagnosis, and administration will assume greater importance and probably become more centralized. We will aim ideally for preventive medicine to be our main task, cure should come second, and therapy last. To some extent following on from preventive medicine, the community rather than the individual will become the main target of our care. This will involve a change of attitude amongst doctors, and they will certainly in the future be expected more often to work as part (not necessarily leader) of a team which includes members of many other disciplines. The individual, that is, the general individual, will assume more and more responsibility for his own health care and will approach the doctor more as a consultant in a consultant capacity than as the god he has seen himself in the past.

Geriatrics will become increasingly important and, together with this, the support, both physical and psychological, of the chronically sick person. The doctor will be given, whether he wants it or not, more and more direct responsibility for life. Who will receive the transplant or electronic aid will be always chiefly his ethical choice to make. This problem is going to increase, and possibly eventually, to it will be added the problem of euthanasia. He will probably have to assume more responsibility for sex education and population control. And on top of all this, our doctor will still have to cope with the everyday clinical problems, the growing problems of mental illness, and the changing ethos of medicine.

From all this arises some idea of curriculum content. Certainly we must get rid of a great deal of the details of inorganic and organic chemistry, anatomy, and biology. The curriculum must tread but lightly upon the specialties, but to protect their future interests, some vocational training is probably desirable. The curriculum must include more family and community medicine, more public health, psychology, and sociology, probably something about computers, certainly something upon statistics. Medical ethics is a subject which all teachers should discuss, and the care of the chronically sick should find a place. Let us not forget clinical medicine; such discussions as these often do, so

let disease take pride of place and finally perhaps we should, looking to the future, sneak in administration. Dull though it may seem, the future of medical care lies not only in producing enough doctors but in making full and proper use of those we do have. At the moment, we waste a great deal of the medical facilities available in our country through poor and ignorant administration.

WHOM TO TEACH

Since to some extent this discussion has already come up, I will reduce a great deal of what I have to say on this matter, but I think it is one of the most important things.

A characteristic of medicine is that it will not accept one label. It has a basic scientific background, but its practice is often an art and often very personal. For an intelligent person, the basic science required is not difficult to learn. In our selection procedure a great deal of emphasis has been placed upon an adequate science upbringing, and those individuals with advanced level arts subjects have been discouraged from applying to medical schools.

Eighty percent of our students think that candidates with a broader academic background should be admitted to the medical course. The course should be designed to cater to all types of students in order that medicine in the future can benefit from the varied personalities gathered in this wider net.

Having said this, the problem still exists of how to effect it. Selection committees receive a lot of ill-founded criticism. They have the very hard task of selecting the right student for their particular course; change the course to cater to a wider variety of candidates and we may then criticize if they are not selective.

There is little objective assessment of selection and the committees may be failing to consider certain attributes carefully enough and may be placing too much emphasis upon others. Being the son of a doctor may be a good indicator of future ability and encouragement, but I know of no analysis of the success of such students compared with others. It is possible that this group of students chosen in a nepotistic way may possess a greater proportion of students wrongly motivated. Some of them may be doing medicine merely to satisfy their

parents. More likely, this particular factor may be completely ineffective in separating those students who will do well from those who will not, and surely this is what the committee is trying to do.

It has been suggested that the selection committee be replaced by a more objective system, but this does not help because what we lack is the necessary objective data. I am aware that some think we cannot even get that.

We need surveys to correlate final success—which needs, I know, definition—with the objective and subjective information available concerning the student before he entered medical school. This is one of our problems for the future.

HOW TO TEACH IT

This is really two separate problems. One is at a teacher level and how he communicates with his students. This is not our concern at the moment. The other problem is at a medical school level and how to organize and present the material to the student body.

In Britain, medical education suffers greatly from the division of the staff into separate, near-autonomous units known as departments. This, perhaps, is a necessary administrative segregation, but it gives rise to problems that are not necessary and not insuperable.

Courses in one department may be arranged in complete ignorance of similar courses being organized elsewhere, and all too often, the prestige and importance of a department is seen as in some way proportional to the amount of teaching time they can claim from the curriculum. Thus, departments may exact a sort of *droit du seigneur* of many more hours than their subject may truly warrant. Departmental teaching also results in an unnatural division and fragmentation of the subject of medical science as a whole, and the student cannot be expected to fully integrate this information himself.

The departmental problem, like other problems of the organization of the curriculum, is susceptible to treatment. Treatment consists of collaboration. There could be frequent meetings of all teaching staff to discuss, compare, and correlate their teaching

programs. In addition, our students believe that there should be a committee in every medical school that includes students and that discusses the curriculum regularly, keeps it under review, and alters it as necessary. Earlier on, I mentioned curriculum control, and these meetings would perform this function.

This need for control in the organization of our curriculum is very pressing. Most students favor a type of curriculum based on integrated teaching, by which they mean the bringing together of subjects that previously had been separated.

There are many types and methods of integrated teaching and no time here to discuss them, but I would mention that in our preclinical course the collaboration of departments in topic teaching has proved very popular as has the illustration of preclinical subjects with clinical detail and patients. There is a real desire to remove the artificial barriers that have been erected between the various subjects. How it is done will vary from school to school.

Within clinical teaching, the present method adopted by most British medical schools is the apprenticeship scheme. A student is attached to a particular clinical firm for a specific length of time in order to see, study, and learn something about specialties.

The advantages of this method are that the students are split up into relatively small groups. They get to see the particular problems and attractions of each specialty and begin to select their future career, and they receive a reasonable working knowledge of "which patients benefit from which specialty."

The disadvantages are that it fragments the subject and thus tends to prevent the growth of an holistic attitude, which all doctors should have toward their patients, and, with our new objectives defined with more emphasis upon postgraduate training, this vocational training of the undergraduate becomes unnecessary.

These are potent arguments on both sides, but the system does need changing.

The Royal Commission recommends that students should continue to be attached to certain named specialties such as pediatrics, obstetrics, psychiatry, community medicine, and casualty. This being so, what is the student going to do with the rest of his time? He could be allowed to do precisely as he wished, study what he wanted to and with whom he wishes, or he could be subjected to group and topic teaching, which are schemes whereby many spe-

cialists of different disciplines come together and collaborate in order to teach students about one topic or one patient. It is a scheme that is presently operating in Newcastle Medical School and, although the organization is a problem, it is popular with the students.

However, the really important thing is not the content or the method but the process.

How is the student going to be expected to learn? If, as I hope, we want doctors with inquiring minds receptive to new ideas and able to abandon obsolete ones, then their training must inculcate this critical attitude. To do this the teaching must stimulate and encourage questions, must encourage the student to follow ideas that interest him, and must make learning an active process. This is the true function of an elective period, to enable a student to study in depth and to place him in a situation in which he is required to evaluate rather than merely acquire information. This is a very important educational process that must be provided for in the training of the student.

Medicine requires men who can think critically, weigh evidence, solve problems, and make decisions, often with inadequate evidence. Didactic teaching does not develop this critical faculty and, worse, can inhibit it.

HOW TO ASSESS WHETHER YOU HAVE DONE IT

Evaluation of student performance has two functions: first, to award qualifications that serve as entries to other courses or to protect society from inadequately prepared practitioners, and second, to provide a feedback to both teacher and student concerning the success of teaching and learning. In the past, far more attention has been paid to the former than the latter.

Whereas awarding qualfications upon the results of a single examination makes some sense, the evaluation of the teaching and learning processes is far more satisfactorily performed by some form of continuous assessment. Such assessment could be made by specific tests, essays, projects, as well as comments by his teachers upon the student's performance in tutorials and other teaching environments.

The Royal Commission recommended that continuous assessment should largely replace the sporadic formal examinations. They also pointed out that there is a need for a study of examination methods in our country.

In fact, the problem in this matter is not really lack of information but a terrible reluctance to act according to recent findings. For some years now it has been known that the correlation between two examiners marking the same paper of about three or four essays is 0.3. In other words, a chance assignment of marks would be almost as effective a means of assessment. G. M. Bull found that if he compared two teams of four examiners who averaged their marks, then the correlation coefficient rose to 0.9. But it would be very expensive to have four examiners to mark each paper.

Similar work on oral examinations has produced as startling a result. Not only are examiners' judgments incredibly variable, but there is a significant effect of external influence, including warmth, hunger, and surroundings. Also, there is a direct correlation between the number of words spoken by the student and the mark awarded. One suspects that this is not always justified.

Still, however, in some of our medical schools the essay and *viva* are the main, sometimes the only, means of assessment employed. In medicine, essays do perform a function in that they oblige a student to collect information, organize it, and express it. This is a valuable learning process, but as a means of assessment it has a very small place, for examiners, being human, cannot arrive at a consistent judgment of performance.

Much the same could be said of the *viva* and for these reasons much attention is now being given to the multiple-choice type of paper. This is reliable, but requires a great deal of work and understanding to render it valid. However, it seems to be the form of assessment of the future.

Thus, we can expect a system of continuous assessment with much more use of multiple-choice question papers.

SUMMARY

It was always agreed that medical education should provide the basic knowledge and skills required of a doctor. Most people also agree that it should train the mind to think. Recently it has been realized that it possesses a third function, which is to cater to the future medical needs of society, and it is upon this that I have tried to concentrate today. This governs the need for reform and the need for new change.

Thus, we need longer continuous training, an inescapable fact. We need vigorous control and constant review of the curriculum. We need a wide variety of personalities attracted into medicine. We need a process of education that demands active quest for and evaluation of knowledge by the student, and finally, we need continuous and objective assessment of the results of this education.

DISCUSSION

Julius R. Krevans, presiding

KREVANS: I should like now to open the discussion of these papers and any previous papers.

YU: I have a question to ask, particularly of the students from Great Britain, France, and Peru, as to what role, formal role, the students play in curriculum organization.

ARREGUI: We have had an active role. The committees of curriculum organization in each department were made up of one-third of the students and two-thirds of the professors. The decision-making of these committees was based on surveys on every subject.

LLOYD: I will give you a copy of our report on staff-student curriculum committees. One of the most important things, we feel, is that in every medical school, there should be a staff-student curriculum committee—50 percent staff, 50 percent students—who constantly review the curriculum.

I am pleased to say that in every medical school in Great Britain at the moment, there is one of these committees. These committees can discuss the more parochial matters of curriculum. With respect to the more general matters of the curriculum, this usually revolves around our Association's undertaking a survey each year and producing a report on

the teaching of a particular subject. Some of the reports that we have produced in the past include the teaching of pharmacology, therapeutics, pharmacy, public health, social medicine, psychiatry and psychological medicine, obstetrics, gynecology, general practice, examination methods, and elective periods.

This year, we undertake a new report on teaching of general practice, since it is an important aspect of our curriculum problem at the moment.

KREVANS: I should like to raise a very troublesome problem; at least, it is troublesome to me. Everybody who has spoken today used the word "community medicine." Last summer I was sent down to Lima by the Agency for International Development as a consultant in the development of a community medicine program in Lima. I didn't know what it was when I went down. I didn't know what it was when I came back.

In the State of Maryland, the two main teaching hospitals of the Johns Hopkins University, just in their ambulatory services, account for over one-third of all the ambulatory physician-patient contacts in the state. Now, what is community medicine?

MILLS: That isn't it.

KREVANS: I am sure it isn't. But what is it? Everybody says we want to have community medicine. I should like to hear expressions of opinion as to what we are talking about. Mr. Arregui gave some details of what really is more than community medicine. It is community involvement. Perhaps that is community medicine. It is community involvement. But I think this is a very crucial question because, to me, the words don't mean anything.

ARREGUI: By community medicine is meant not only a projection of the medical school, through the teaching hospital, toward a community, but the co-fact that the community has to be involved in the decision-making of what their needs are. We can have very objective feelings and tools on how to approach and define the needs of the community, but sometimes the people of the community have the answer for what their needs are, and we have to serve them. That is what we are studying for. This is really what community medicine is now. The ways to do it require a lot of thinking and planning, of course, and many important changes.

KREVANS: You had some interest in this, Dr. Bosch?

BOSCH: Yes. I think it is very well tied up to the identification of the health problems and needs of the community. It is very difficult to define what a community is. I think the needs take you very close to the problem of delivery of comprehensive health services to a "given population." Identifying the common objectives of providers and consumers of health is an important part of that. Getting the "given population" involved in policy-making takes us very close to what we call "community medicine."

LLOYD: I should like to answer the question from another angle, that is, what it means to be interested in community medicine and to pursue it, because it involves a complete reversal of attitudes on the part of doctors. What community medicine means to me is that your main target is the community, not the individual. At the moment in our country, we treat the individual as soon as we get him and with everything we have within our power. Now this is not something which we are going to be able to do in the future because, apart from anything else, it costs too much, and what community medicine really is going to mean is a subjugation of the individual to the community. It may mean that a particular individual may not receive the treatment which he really requires because the resources and the finances available are better turned into preventing tooth decay than in providing him with an artificial kidney. The priorities are different when you start to emphasize the community.

Preventive medicine, of course, is one of the most important things in community medicine.

KREVANS: I hate to be obtuse, but there is an absolute contradiction because, on the one hand, if you define community medicine as providing the community with what it wants, giving them the choice, every study that has been done on what a community wants has shown that it is basically superb individual care. If you turn around now and tell me that community medicine is to put the needs of the community ahead of the individual, I find that a difficult argument to follow.

LLOYD: This is what community medicine means in my terms. In terms of priorities, I am afraid it is a fight between the individual and the community. You can't really adequately relate to both. If you have so much money, you can put it into one sphere or another. A lovely little poem talks about people who keep on falling off a particular cliff, and the village is divided as to whether to put a fence around the top or an ambulance in the valley. In the end, they decide to put an ambulance in the valley, whereas they should have put a fence around the top.

This is the way, to some extent, I see it. You have to tackle problems at the root cause, not wait until they happen. The root cause is in the community. Once they happen, you have the individual.

QUERIDO: Have you finished the community medicine story?

KREVANS: Mr. Mills wished to comment.

MILLS: I would say that ideally everybody here is in favor of preventive medicine, but one is snowed under with patients presenting symptoms. Community medicine doesn't subjugate the individual, but elevates him. You try to treat an individual in the context of his community. It is an awareness too often lacking today.

A physician in your outpatient department might prescribe such

"simple therapy" as bed rest, aspirin, and orange juice for a child he has examined. He doesn't know that the child sleeps in bed with three other children, and his parents can't afford the orange juice or aspirin, and thus, he never gets the treatment. It can be as simple as that.

ESCOFFIER-LAMBIOTTE: I should like to try to answer your question.

We have a very good example in France of what you call community medicine. It is for psychiatry. We had, inside the revolution, a very special revolution of the psychiatrists, since quite a long time ago they decided that the kind of psychiatry that was taught inside the university world did not fit community needs. So they organized their own teaching of psychiatry, which was completely illegal and which was not crowned by the title of "psychiatrist." They organized it in Paris on a community basis.

This was a group including the great unions, mayor of the city, representatives of the families of the school or teachers, and so forth. They studied the needs of that special community of 70,000 people as far as psychiatry is concerned, so they had, as the first step, an understanding of these needs. Then they requested from the government a few of what they call lay organizations instead of the huge psychiatric hospital and the one we had in university centers. They offered many small dispensaries, so they decided to organize the teaching of psychiatry in these many small dispensaries, and they had only one huge hospital outside of the city.

Little by little, they developed so well and in such an interesting way that they organized a gerontology clinic and special organization for children and, at last, they had in their hands the whole health care of the city. And this was being done completely outside the university. So now since the revolutions, the French psychiatrists are creating an independent teaching of psychiatry.

They decided that they would organize their teaching on that community basis, and they decided, too, that they would elect the professors from among a college of teachers that would be chosen by these people of the dispensaries.

This is very typically my definition of community service, and the example is typical, too, because in Paris we have huge university centers, and we have no organization for the health care of community groups–dispensaries, nothing for the old in certain places that should be taken care of, too.

LAUGIER: I have often discussed the subject of community medicine with French students. I get annoyed at them when they talk about community medicine. I do not know what it is. When I treat a cancer patient I do not treat a community disease, but rather an individual patient with his disease.

What the students say is the following: In our curriculum inside the hospital, we are taught in a sterile and protected scientific atmosphere. Once in practice with real patients living in a real home in the real surroundings, we do not know how to handle the case and need some kind of recipe as to how to behave inside the family facing a minor disease or even a major disease. Since they do not have the recipe, they often needlessly send the patient to the hospital.

The family probably has to accept what the students suggest. They want to know more philosophy of the society in which they live. They want to spend some time in a small dispensary with the family doctor. However, I feel very strongly that during the six years of medical school, they must learn the most basic scientific facts. Once they are graduated, they quickly learn to handle patients in their own environment and become good family doctors if that is their desire.

I believe you will agree with me.

KREVANS: I am concerned about it. I just don't like make-believe in a subject as important as medical education. I find the aspirations perfectly legitimate but I think they have to be defined very clearly. I, for example, find absolutely no logic in the argument that because a pediatrician will see a thousand patients with pharyngitis for every one with meningitis that, therefore, he has to spend a thousand times as much time learning how to handle pharyngitis. The educational system has to, in a sense, direct him to learn a disproportionate amount about certain things. One of the things which I was very pleased to hear Mr. Lloyd bring up was the really fundamental need, I think, for the educational system to create somebody who can continue to learn.

One of the suggestions made was to put a social anthropologist on every faculty of every medical school. We sat down and counted the number of social anthropologists in this particular underdeveloped nation. There are 15,000 at the present time, with very few in medical schools.

McDERMOTT: On this subject of community medicine, there is no phrase and I have gone over every conceivable one—that tells exactly what is in mind here that does not have a double meaning. No matter how one does it, one ends up with a phrase that has a double meaning.

Quite recently, *Lancet* has had quite a thing going on the subject of the phrase "community medicine." My understanding of the situation is if we take a hospital—and in this setting we are talking about a university hospital—that hospital performs a certain number of medical acts in the course of a year, say 50,000. And these 50,000 people are that hospital's constituency. They are selected on the basis of disease or illness.

If the system is working properly, they are fit subjects for the highly sophisticated instrument that a modern medical center is, and that is fine. Where the trouble lies is that we have no way of knowing, at least in the

United States, as to whether those worthy people, biomedically and socially worthy people, are the only ones that deserve that particular sophisticated instrument or whether there are 10 percent more or 200 percent more who don't have it.

So that in addition to its constituency, a university-based medical center also has to have a community, and the community is a group of people chosen, not on the basis of symptoms of disease, but chosen on some sort of geographic or neighborhood lines. Most of the people in the community are well at any one point in time. Some are sick; most are not.

Now the role of those who are interested in community medicine is not as individual physicians to rush out and deliver personal medical services to the members of their community. The role is to analyze the problems of that community, invent new ways of handling problems of the community, and, above all, ensure that the individual members of that community do indeed have entry points to some proper medical system—perhaps a medical system or primary medical health care where they don't need a very sophisticated instrument that is a medical center.

What I am trying to say is that the application of biomedical science and technology is done through one system, the personal physician system in its constituency. It is done through another system for the "community medicine," that is, through the indirect nonclinical system. So that, whereas I agree with your spirit, I don't agree with your example in that your example to me was a terrible failure of the personal medical system in the outpatient department of the hospital that you mentioned.

I would think it much more important that the individual personal physicians, operating out of that hospital because they also had an education in the community medicine side, would have the awareness which you deplore and with which I agree. They were defeating their own technology by their ignorance in the situation you chose.

I think Mr. Lloyd said something terribly important and that is that to become involved in community medicine on an intellectual and professional basis requires something that goes completely against the grain of most of us who are in medicine. In other words, it is a sophisticated—I use the term—statistical compassion here, borrowing from Waddington's statistical morality. You have to have statistical compassion. You have to be the kind of person who is willing to get his satisfaction from dealing with the community as a whole and a realization that one is doing things for people one never gets to see. This is the kind of temperament that people in political life have instinctively. It is not the kind of temperament that those of us who selected medicine as a career generally have. We are usually those members of society who have chosen to exert our influence in a personal way, whereas to go into community medicine is a sophisticated thing. That is my summation of it.

In hospital or office medicine, we are dealing with a constituency and it is the personal medical system. In community medicine we are dealing with the indirect application of science and technology on a nonpersonal basis to the members of the community. This personalized medical service they get elsewhere, that is, through other systems. It is the job of those in community medicine to see that the other system is available and that the members of the community know how to obtain its services.

RUHE: It seems to me in the contact I had with the student activists in American education that their interest goes considerably beyond this, really. It is not so much just trying to introduce into the curriculum a real understanding of the social, political, and economic factors which cause the patients to come into the hospital, though that is part of it. It certainly is not simply learning how to care for the patients who come into the hospital. The students that I have had a chance to talk with recently are rather insisting, as some elements of the public are insisting, that the medical profession take responsibility for going into the community and correcting the problems that are causing the patients to come to the hospital, not simply studying them to find out what causes them, but actually going out and doing something about them.

The medical profession in this country has not in the past years seen this as its responsibility. I suspect that it is the profession's responsibility in a very real way; but it requires a completely different kind of orientation and significantly different activity from what the doctor has done in the past or what he has been taught to do.

Just as an extreme example, the number-one killer in this country today of the young American male is the automobile.

Now, we have never spent any time in medical education in this country dealing with the problems of how to control the use of the automobile in the American public. This is perhaps, as I say, an extreme example. Yet if we are really going to cure this number-one killer, we are going to have to spend a great deal of our time in dealing with that level of problem.

It is much simpler to think in terms of going into the poverty-stricken community and trying to do something about the poverty of the community. When you are talking about a "disease" which is due to affluence and personal liberty, and all the things which people like, which is the case with deaths on the highways, then you need a different level of activity. But, unless I misunderstood what the students have been telling me, they simply don't believe that the medical school now has the right to stop with the teaching of what has been called scientific medicine in the past. Rather they believe it now must go well beyond this and actually try to change the conditions that have caused the problems.

QUERIDO: Well, I think the preceding speaker touched on a point which probably can better be discussed later, and that is what really the student

unrest is. I think it goes far beyond what these selected gentlemen have presented, but they are selected because they come from schools that have selection procedures.

With regard to community medicine I want to say that the definition might be difficult, but its existence is a reality. A part of the activities of community medicine is to describe the pattern of ill-health (mental and somatic) in a community, large or small. This pattern will be highly dependent on the socioeconomic and ethnic structure of the community. It differs in an area with low standards of education, poverty, and bad housing, from a wealthy area, and these areas might be quite near to each other. This creates the need for decision on priorities of general measures, rather than individual care.

In Holland the general practitioner is still the center of the medical care system. He lives within the community and therefore cannot dissociate the activities of community medicine and personal care. Because a number of students are determined to work as general practitioners, we include examples of these activities in the curriculum, but also in the near future require of those going into general practice an extra year of training, partly in general practice, social psychiatry, etc. In this way, we respond in a sincere way to an important motivation for students.

CHIAPPO: What has been said is clarifying a little more what community medicine means, but I am in the same situation as St. Augustine. He said, "I know what time means; but if somebody asked me what time means, I can't answer." That is happening with community medicine. It is dangerous to look for one answer or one idea. I think it is better that we understand community medicine in the background of the corresponding societies to which we belong, and in this perspective, I should like to answer in the perspective of the society to which I belong.

Dr. Krevans has been in our university, spending three months there, and is helping us in community medicine, and this is very important in Peru and in the surrounding areas. But what we mean, we hope, by community medicine is this: Change what is happening with our physicians. We were preparing highly specialized physicians to go to the affluent society to make an individualistic or therapeutic approach, and thinking of earning money. On the other hand, giving the Peruvian doctors to the American hospitals in this country is a part of the brain drain. We need to change and to focus in our community, in our society. Then we first thought that it is impossible to build, to set up any kind of community medicine if we isolated the school of medicine and if we failed to put the school of medicine in the framework of a university.

This is Flexner's idea, a very old idea. This is first to put the school of medicine in the framework of the university. Then we think that our stu-

dents could be prepared to act not only as physicians, as technicians who know about disease or preventive medicine—this is also a part of community medicine, but is not public health. It is more than that. This is to convert or encourage the students, or to receive the students' demands and to cope with the students' demands, to convert the future professionals into promoters of the community. They are going to know directly the problems of the community and face the problems as a matter of the structure of the society. If they are not able to face it in this way, they are going to make an individualistic medicine.

Community medicine means for us that the future physician is going to act as a promoter of the community and, as a promoter of the community, must know everthing about community life. He must know everything about how the people in the community think about medicine, and how they think about their own situation and the social problems, and how they organize. For instance, I believe the future physician going to a little town will be able to organize the community in different ways; organize in different ways as a promoter, but not only taking into account the health or the disease but the life of the community, and also be able to conduct a team, not acting alone.

KREVANS: Professor Querido, you wanted to raise a question?

QUERIDO: All right. I hesitate to raise it because the title of the afternoon was the need for reform of medical education as seen through the students' eyes, and of course, the students have given us their view on it.

The interpretation of the letters which you have written to the members of the symposium was student unrest. Now student unrest might be explained, or might be interpreted as the way the students have presented their view, but I personally am confronting completely different student unrest and this student unrest might have a much more profound influence on medical education than the technical remarks that have been made in the preceding papers imply.

It is very interesting to compare what happens in my country and what happens at this table. The interesting point is that the student unrest, as it is going through the world, is a social phenomenon which is a motive for the medical students to ask for community medicine.

The question arises why these differences in expression are there. I think that one of the reasons is that Mr. Lloyd and Mr. Mills were selected when they went to medical school, and therefore are in some respect part of the Establishment. They are judged by the Establishment as being fit for going to medical school. (I have been taught this terminology by my students.)

The third one, the Frenchman, Mr. Zelter, accepts, as a student, a system which is, for the Dutch, unbelievable. It is unbelievable that people

accept to be selected with 70 percent rejection arriving in third year. This is a system which is, to my mind, socially unacceptable. Mr. Zelter probably doesn't accept it, but he doesn't put this as the center of his discussion. He puts his discussion much wider. Why does he tread so lightly over this part? Because he is part of a community where competition is an intricate part of that community.

The fourth student, Mr. Arregui, is the only one, I think, who presented student unrest as a social phenomenon.

Now, what is the situation in Holland? Holland does not accept competition as an outcome of achievement. That is a very interesting point. In Parliament it is said that everybody who wants to study medicine has the right to study medicine. If he wants to go to the university, there is no limit whatsoever, and if he wants to do his exams five times, it is not our business. He has the right to receive higher education as he thinks fit.

RUHE: But he does have to take exams?

QUERIDO: Yes. So Parliament will say in Holland that if there are too many students, you just have to open more medical schools.

This is a dangerous attitude, because on one side we cannot define the need for doctors, and on the other side, we only see the results of this policy eight or ten years later.

So in a country like Holland all the students who passed national examinations after secondary school desire to have the opportunity for university studies. This, in fact, cannot be done for technical reasons, so you have to select. But they won't accept selection, and certainly not on the basis of achievements in science. I think they are fundamentally right, because we have no adequate means for selection. The point I am coming to is that the student unrest story, as I see it in a wider context, is to find ways by which the students acquire the feeling that their requests for social change will be reflected in the choice of the students who are allowed to study medicine. I think that this is extremely difficult. It means that the unrest about the medical curriculum is not as technical as has been presented by the students here.

I mean that, basically, the protesting students say: We first want to know the goals of the society before we want to talk about selection and the curricula. This is a much more difficult discussion.

The problem of student unrest in a number of continental European countries is therefore twofold. First, it has to be made clear that sound medical education is always limited by available facilities and that therefore selection cannot be avoided. And second, the political development (which is more advanced in Europe than in the United States) will influence the selection criteria. This last aspect is of course extremely complicated.

So the question that I want to bring out, especially to Mr. Lloyd, is what does he think of selection. How does it go, and how will it develop? I will make it easier for him. Maybe he can say what should not be done?

KREVANS: Mr. Lloyd?

LLOYD: Thank you. As you are well aware, and as others probably gathered from the paper, I think that selection is really one of the most important factors for the future of medicine.

If you have some idea what you want a doctor to be and what sort of medicine you wish practiced in the future, then you are bound to get some idea of what sort of people you want.

You want as wide a variety as possible. Medicine is a huge discipline. It can accommodate about every type of personality and, in fact, it must do so. This is really one of the points I was trying to make.

In our country, we restrict our selection to a rather scientific elite, and it is very difficult for an artist to get into medicine. I think this is a shame. I think it is a shame for the future of medicine, because we are missing a very valuable part of our society in this way.

It is my belief, and I know it is not yours, that we can get some idea of the sort of objective and subjective attributes that a man should possess in order to give him the right to enter medical school. At the moment we don't possess those criteria because nobody ever bothered to look for them.

I don't think that it is too difficult to take a series of selective attributes and then analyze every medical student who has gone through medical school in the past few years to see which of those attributes he possessed in the beginning and which he didn't possess, and then find out what sort of physician he became.

You might find a particular type of group going into the more esoteric branches of medicine and another particular group going into the more humanitarian branches of medicine, which is a very useful thing to know for future selection. This sort of analysis requires a computer analysis and it will be a very big problem. I say a computer analysis because the figures involved are going to be large—anything between 13,000 and 15,000 students analyzed on this sort of basis—but I think we will be required to do it.

In the future we will be selecting from a far broader category of candidates than now.

QUERIDO: I do not think that your system will work because the spectrum where people end up is so enormously wide, running from bacteriologist, biochemist, physiologist to the psychiatrist, the surgeon, and the physician, social medicine, and so on, so that I don't think you can put a system to work in which you have recognition for all these variants. Further-

more, the student might change his attitude during his four or five years of study. You know very well, as I do, that assessment of many criteria done in one year might be completely different for the same man next year.

I often wondered whether the simple system, accepting an average of all marks in high school as selection procedure, is not the best. In this way, the high school population is divided in two groups, one which will be accepted and the other which is not accepted. I do not see whether all other criteria, such as motivation, attitude to fellow man, responsibility, are distributed in a different way in the two groups. If it could be proven that this is not the case, it would simplify the problems. However, the population has to accept this selection procedure because otherwise the social conflict will continue.

LLOYD: I'm sorry, but just a few points. Your very arguments argue against our present system. That is quite right. We are too rigid. We select the scientific elite. That is wrong. We select very few art students.

QUERIDO: The British do?

LLOYD: I am talking about the British system. One thing, for example, I personally want to do is to find out what happens to the arts students in medicine, as compared with similar groups of science students, just to find out whether the dropout rate is more or less, what sort of doctors they make in the end, and what branches they go into. Now, that is a form of analysis which would be very valuable to present to a selection committee.

KREVANS: Mr. Yu, do you have a comment?

YU: Yes, I agree with Geoff's point completely that you have to select from a broader basis. John Gardner has said "Innovation and renewal within an organization requires multiple points of initiative in decision-making with constant attention to goals."

The point here is that if a medical school is an institution, and if it is to be an institution that is remaining vital within itself, it must have the capacity for change. If you want to have that capacity for change, your selection of the people who make up that field should be as broad as possible. This implies that undergraduate students in the liberal arts can make a contribution to medicine as well as the students in the sciences.

Now one thing—Geoff also wants some type of objective evaluation of doctors, perhaps by computers. I, for one, don't think this is possible. I see no way of our being able to evaluate who is a good doctor unless we can define criteria for what makes a good doctor.

KREVANS: We have some experience with the effects of unlimited entry into medical school systems. Dr. Bosch, Professor Chiappo, and Mr. Arregui might want to speak to this, because in Latin America they have lived through and are living through it now, and perhaps Dr. Chiappo

might want to say something about it, because his school, in a sense, is a counterrevolution.

CHIAPPO: It is a new kind of revolution. We have been in the oldest university, and in '45 with this political change, of course, which happened also in our countries, the school of medicine was open to almost 900 students for each classroom, each year. Then the lack of proportion between the students and the faculty members and facilities was terrible, and that was really a sort of an earthquake in the teaching and everything else.

There was the mass style of attitudes in everything, lack of seriousness in examinations and so on, and then in '61 we had again the same system, because this system which disappeared in '55 for ten years came back again with a selection procedure.

In '61 the open doors came back again, and then 97 percent of the faculty members and almost 350 students resigned, quit the university, and built a new school of medicine and university with selection procedures. I strongly believe that the selection of the members of the university, students and professors, is the guarantee that this university will operate. To open the doors indiscriminately is a serious danger to the university, to higher education, and to medical education. That has been our experience.

BOSCH: I can give the Argentinian experience in the early 1950's. The very unusual number of 6,000 medical students came into our medical school in the University of Buenos Aires. There was unlimited time for those individuals to be students. Sometimes you would find somebody who had been a medical student for 15 or 18 years.

I completely agree with Dr. Chiappo. This was a source of continuous disturbance for those people who really wanted to study. Now we don't have 6,000, but we still have 1,200 in that same medical school. The relationship of professors and students is virtually impossible.

CHIAPPO: Excuse me. I should like to add this: We need to ask the obstetricians to teach chemistry, for instance, because we don't have enough professors of chemistry.

SCHWARTZMAN: It seems just as futile to change the population entering the school and leave the school the same, as it would be to change the school around the same population entering it. Curriculum revisions must go hand-in-hand with open-door policies.

I am not clear on whether, in your experience in Buenos Aires, that happened. You developed a kind of flexible curriculum with unlimited time and relevant kind of experience for students who might go into fields other than those chosen by the students that had come in before. Did you revise the curriculum in a major way as the doors were opened, or did you just open the doors to the same kind of curriculum?

BOSCH: This was demagogic opening of the doors, and nothing else happened.

SCHWARTZMAN: It must fail unless you recognize the obvious onslaught that will come with people of different backgrounds and different desires and different needs. To open the doors is appropriate, but to open the doors to an entirely different institution.

BOSCH: When Dr. Querido was raising the point about selection, with this experience in mind, I was thinking that if you were going to accept selection, and if the medical school staff, students and representatives of the community could define and agree upon the objectives, only then, would you set the criteria for selection.

QUERIDO: Yes, but I am looking for the criteria.

DUMONT: I want to comment on what Dr. Querido said. Perhaps it should be said for the Americans here that in Europe we don't have colleges, so the people come out of secondary school and go into the university. There is no intermediate between a difficult but widespread secondary education and the more specialized university education.

One of the main demands of the movement in France and Belgium was to open the door of higher education, and certainly when you read books that show the percentage of the population going to the universities or colleges in the United States, and compare this proportion to the proportion that goes to the universities in Europe, the percentage is much lower in Europe. The European students want to get free access to higher education, which I think no social-minded person would deny on principle. But the application of this principle to the school of medicine, I think, is very wrong, because the school of medicine turns out only physicians. MD's are only able to perform as MD's and therefore require jobs of MD's. The market for MD's in any country may be well defined; it is not unlimited. The output of MD's in a country should therefore be adjusted to the needs of the country. If a country delivers more MD's than it needs there will be two important consequences:

1. As the amount of money granted for medical schools and medical education is limited, this country will dilute its educating power on too many heads, i.e., it will not provide its MD's with the education they could have obtained if the number of medical students had been restricted. This consequence is very real: in France or in Belgium the ratio of teaching staff to students must be around 1:10, whereas at Harvard it should be around 4:1.

2. The MD's will not leave the country. They will stay and, according to Parkinson's law, will create the work that is necessary to sustain them. With the spiraling costs of medical care, they will see to it that the country goes bankrupt. This again is not a far-fetched idea. An MD can always and will always see to it that his existence is justified. For American audi-

tors here, I recommend the reading of *Dr. Knock* by Jules Romains to fill in the details. There is therefore a clear need to restrict the output of medical schools to the needs of the country. If a country wants to avoid the tremendous waste of energy and money implied by the progressive elimination of the less able students during the whole course of the medical curriculum, it has to institute some sort of selection before medical school. This seems very undemocratic, and in our country no politician would dare to support such an idea. They will have to at some time.

The contradiction between the necessity for selection before the medical school or the university and the desire for wider access to higher education could be resolved by the creation in Europe of the equivalent of the American college. In this intermediate school, people could get, at much less expense than at the university, education to the level of their capacities without specializing too soon. After this college education, they could get a job or decide to go in for specialized training at the university. At this level, there would be no great difficulty in instituting a selection procedure. The creation of colleges would better answer the problems of higher education in Europe than the dilution and overflowing of the university educating force.

KREVANS: While we are talking about innovations and where they will come from—since Mr. Yu quoted from John Gardner, in that same book Mr. Gardner raised the very serious question whether important innovations could ever come from within the industry itself, and we are going now to the example that he used in his book. He said it wasn't the hotel industry that invented the motel, the most important innovation in innkeeping.

The next presentation, then, will be by Mr. Yu of the University of Minnesota and the Student American Medical Association, regarding student participation in the reorganization of medical curricula.

Victor L. Yu

STUDENT PARTICIPATION IN THE REORGANIZATION OF MEDICAL CURRICULA: THE U.S. EXPERIENCE

What are the reasons for the recent onset of widespread student unrest in medical schools throughout the United States? I believe there are at least three circumstances that have uncovered this previously hidden facet of the medical schools:

1. *Sociological phenomena* Young people throughout the world are demanding a greater say in their educational process as well as the political processes. Medical students are part of the generation that has dwelt in this period of dramatic change, and it should be expected that the student unrest seen internationally should finally touch the medical schools.

2. *A medically-sophisticated public* The general public today is better educated and better informed than the generation of yesteryear. Not only has there been a greater emphasis on science, but the recent spurt of spectacular medical advances has turned the public spotlight on the field of medicine. The problems of immunological rejection in organ transplants are as familiar to the public as the problems of getting a man to the moon. The result has been an increased public awareness of the discrepancy between the advances of medical science and the actual delivery of quality health care. Thus, the idealistic medical student has his social responsibility clearly delineated.

3. *The ability to organize* Eric Hoffer, the longshoreman-philosopher in one of his mellower moments confided, "Perhaps this younger generation is as good as they think they are. They

certainly have one skill which previous generations lacked—the ability to organize."

This combination of circumstances—the increased expectations of the medical student in a period of social change plus his ability to organize—has been the reason for the emergence on a national level of medical student activism. Although student dissatisfaction with curriculum has existed as long as there have been medical schools, it was not until this generation that medical students have been able effectively to mobilize their efforts in initiating overdue reforms.

FOCUS OF STUDENT PRESSURES

Student organizational efforts fall into two categories: proper channels and independent student committees.

The proper channels include established student government structures, for example, medical student council or class officers. The independent student committees have arisen because often only minimal results were obtained by working through proper channels. These committees are independent of faculty control and are usually formed spontaneously by a number of students dissatisfied with their present curriculum. On a national basis, the Student Health Organization and the Student American Medical Association function to coordinate and stimulate student activities in community health and curriculum reform.

Student pressures have focused on immediate course changes, long-range curriculum reforms, and environmental reforms. The immediate concerns deal with student efforts directed toward improving individual lectures and lecturers as well as suggesting revisions of specific courses. Long-range curriculum reforms include the institution of new curricula and the inclusion of community health into the curriculum. Environmental reforms are directed not at the curriculum per se, but focus on the educational atmosphere. Specific examples show a wide variety of topics:

1. The role of teaching in medical school;
2. Problems of departmental autonomy;

3. The student as a teacher, that is, placing some teaching responsibilities on the medical student (for example, tutoring freshmen students by senior students, faculty-guided, but student-taught seminars);

4. Formal student evaluation of curriculum and staff;

5. Revision of the testing, grading, and class-rank philosophy; and

6. The medical student as a scientist-physician.

FACULTY RESISTANCE

Faculty members are often insensitive to student dissatisfaction and may reject a student proposal not on any rational basis, but merely because it is a student proposal. Three clichés are especially commonplace:

1. *Immaturity* "Students are immature, inexperienced, and otherwise unqualified to criticize curriculum."

2. *Status quo* "Although this medical education process has its weakness, nevertheless, it has produced good doctors," or a postulate to the above argument, "I went through this curriculum twenty years ago, why can't you?"

3. "Changes take time" While admitting that student criticisms have validity, and that student proposals have merit, hopes for any foreseeable reforms are dashed by this argument. The end result is that the faculty essentially says, "We'll think about it, but we won't do anything about it."

The most prevalent approach used by medical students to effect change is the "white paper" approach. A group of concerned students organize to form a committee to consider specific defects in the curriculum. Their first step is to define the philosophy and objectives of medical education and then relate these objectives to their curriculum to demonstrate to the faculty that the defects exist. This approach is characterized by documentation, for example, polling of student opinion or surveying curricula at other medical schools.

The results of these efforts have been voluminous student dissertations on all aspects of medical education with positive, construc-

tive suggestions. Usually these student reports are so thoroughly researched in addition to being innovative, that the report alone is sufficient to dispel faculty complaints of immaturity.

A more aggressive approach to initiate reforms is the "confrontation" method. This approach is characterized best by an attitude of "moral purity," just as the white paper approach is characterized by documentation. Students assume an attitude of moral purity and blame the failures of medicine in society on the Establishment in organized medicine. They, the students, will right the wrongs perpetrated by previous generations of physicians. The students accuse the faculty of failing to live up to their responsibilities to provide a relevant curriculum that will produce a compassionate doctor as well as a scientific physician.

The faculty clichés of "status quo" and "changes take time" crumble under such a rhetorical onslaught since the students demand immediate changes to rectify an urgent educational crisis. Despite the obvious prospect of alienating faculty members, the confrontation approach, when used sparingly, has been very effective in accelerating the process of needed reforms. While the "white paper" approach is a more acceptable tactic, often faculty insensitivity to student dissatisfaction makes the confrontation approach an inevitable one.

RECOMMENDATIONS

1. *Communication* Listen to the student viewpoint!

a. Recruit student representatives for medical, political-action committees, medical education commissions, and other study groups.

b. Require student participation in evaluation of government-sponsored teaching programs.

c. Require student participation on faculty committees that deal with or receive support from the government, for example, administrative committees, educational policy committees.

d. Maintain liaison with the Student American Medical Association.

e. Periodically sponsor student-faculty seminars or conferences on medical education.

2. Allocation of federal funds:

a. To encourage good teaching (as well as research);

b. To develop new learning techniques and advanced learning devices for student use;

c. For research directed toward improving the educational environment;

d. To expand neglected courses dealing directly with community health, for example, public health, psychiatry, medical economics, sociology, medico-legal courses.

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DISCUSSION

Led by Julius R. Krevans and Victor Yu

MILLS: I should like to say a few things about some of the points Mr. Yu raised. In many cases in my experience, there have been teachers who have been on the brink of being really good teachers, but who have been basically afraid of a class and have been rather withdrawn and afraid to react fully to the class.

By confrontation, all you will do is embarrass the faculty publicly. They withdraw, and you never accomplish anything. I think there is far greater need for these things to be done quietly, for the people to be approached individually, and for matters to be kept on a strictly departmental basis.

The second point is that I don't know what students can contribute to the selection process. I don't think the selection process is good enough now, but I can't see how students would improve it at this stage.

The third point is about methods of attack on these problems and the channels used. At McGill when we do approach these problems, it is through the department head too, but it isn't to the consternation of the faculty. They realize that is the way it must be done, and it is important to do it that way.

We use them as a last resort. If you can't get things done by the department head, you go to the dean or vice-dean.

YU: May I answer that?

KREVANS: Sure.

YU: In the few cases where we do evaluate the teacher, we don't make a public condemnation. It is an evaluation that is based objectively on a large series of questionnaires. Then we screen these questionnaires. We don't say the guy is a "louse" or a "bum." We only allow constructive comments in areas where we think the teacher can bring improvement.

Second, you mentioned something very dear to my heart, which I haven't brought up here since this is essentially between faculty and students and that is the point of not making criticism public, of going to the department heads instead. If you do that, you have something called medical student apathy. We found everybody was talking about medical student apathy. Perhaps, it is a small number of activists and a silent majority where activists aren't representative. We found that among the silent majority, their hearts were with the activists. The activists took more time and were more vocal in saying this.

I think perhaps the difference between undergraduates and medical schools is that the large majority agree pretty much with the philosophy of the activists. They are just less prone to get out and work. So we examined the problem at those particular schools and discovered that where there was medical school apathy, it was because the activists themselves controlled the channels of communication. It was the leaders' fault.

We found that only a few students could be on the curriculum committees in these cases—only a few students knew the dean. The activists came; they asked the students to participate and come to the meetings, but they never came. The students are smart enough. They know you are only playing a game. You want to present the views for the students. So, one attack that I hadn't mentioned in regard to future activities is that we are trying to make our support greater than just a few of us. We are trying to bring to the whole medical school, to the majority of medical schools, an opportunity to present their viewpoints.

We found that people just say you are unrepresentative, but when we are able to channel a large body of opinion into the faculty, they are very receptive. One thing is that you have to make it public. Publications are the key thing in this. If you don't make it public, teachers will keep on being the same—there is no reason for them to change.

If you make it public, at least they will have it right in front of them, and they can't wash it out of their minds.

The second thing I ask you—what do you have to lose?

MILLS: Assuming all else fails, fine. But most teachers are eager to change and want to be good teachers. They are looking for constructive, not destructive opinion.

YU: We are not destructive. Unfortunately, taking a stand is often equated with being destructive; I think remaining silent is certainly destructive.

MILLS: It is fine to publish your results of what you have done, but I can't see that to be constructive with a teacher, especially publicly, you can help but be destructive.

BOSCH: I have been very stimulated by many of the subjects that have been talked about yesterday and today. It has brought to my memory a model of group interaction described by Philip Hauser. He interprets how a group can be sick, like a person, and what are the different stages of group disease.

He defines apathy as the worst stage of disease. A healthier stage than apathy is violence. The third stage is an antibody stage. In this antibody stage, we have subgroups: indignation, curiosity and doubt, solidarity, and productivity.

We heard descriptions of indignation today. Curiosity and doubt appear immediately and could be very well exemplified through research in medical education. This may take us into solidarity, and only out of solidarity will some kind of productivity come from a group.

A fourth and very dangerous sickness for a group is security. This is what happens when we are absorbed by the system. We have a good salary, we are comfortable, our families are comfortable—then we don't want to change.

The ideal healthy situation is in the fifth stage—creativity. Here we need vision, courage, leadership, identity, and group action.

LLOYD: We have already mentioned two factors that are much more important than curriculum, and that is the future of medical care and the objectives of undergraduate education.

Victor mentioned a third, and that is environment. I couldn't agree with him more. Environment really is more important than curriculum because certainly in our country students are fed information and then receive coos of delight when they regurgitate it unaltered. This is a terrible environment to be in. It is stultifying. What we seek is an environment of a true university with little dividing the teacher and the taught.

When Victor talks of going to the power, this is already accepting a certain amount of defeat because the situation shouldn't be like this. It shouldn't be a question of students going to the power. It should be a question of the power lying on both sides of the fence.

KREVANS: You mean there should be a fence?

LLOYD: No, the fence is there already. It shouldn't be. That is why at the moment staff-student curriculum committees are accepted as a sort of necessary evil, and the staff often feels very complacent and rather good about having one. The attitude often is that this is the sort of thing that students want, and it keeps them happy.

YU: What did the faculty members and other students think about doing, for instance, when we criticized a course or teacher and made such comments public?

KREVANS: I think what the response would be depends on who the jury is. One of the things that is not done on medical school campuses but that is done on the undergraduate school campus at Hopkins is that the students publish an annual report which lists, course by course, the whole catalogue, and notes that professor so-and-so picks his nose while he lectures, and makes other constructive comments. This is a source of great amusement to both faculty and students, but as far as I am concerned, it is a kind of shabby psychotherapy that does no good at all.

On the other hand, where the students have identified really huge areas or important areas of omission or bad teaching and have documented their case, as you say, and then go to the place where the bad teaching is without publishing it in the newspaper, it gets changed. But the trouble with this big public display is that the important things don't get the disproportionate attention they need. The guy who picks his nose is equated with the fellow who is not teaching his subject because he doesn't know it. Neither one of them really gets corrected.

I think I feel very much the same as Mr. Mills does.

MILLS: I would add that the undergraduate school at McGill also has a course guide. You get large shifts in population between classes. If a class is good, it gets packed.

KREVANS: The other thing is somewhat akin to that in the motion picture *Mary Poppins* where Miss Andrews sings that lovely little song, "Just a Spoonful of Sugar Makes the Medicine Go Down." I don't know why so many students seem to think that learning is necessarily all pleasant, that everything has to be popular. There are many things in education that are difficult and, because they are difficult, they are unpleasant and therefore unpopular, but that doesn't make them unnecessary.

One of the things that I am concerned about with this kind of approach, Mr. Yu, is that you, in essence, create popularity contests, and you are not going *to* the power. You are going *with* the power. The cumulative power of the student body is enormous. There is an enormous respect among the faculty for student opinion. So, if the students use their power, in essence, to alter what is taught in a direction so that all those things that are popular persist and flourish, I think the total effect of this will not be constructive. I think it will be destructive.

USHIBA: I was impressed by earlier mention of the three legs of the faculty, that is, patient care, research, and teaching. I was rather surprised at similar things found both in the United States and Japan. We are confronted with the problem of the irresponsibility of the hospital doctors in patient care, because they are doing the three legs at the same time. So we in

Japan, at least in my school, are planning to divide the responsibility of patient care from the teaching and research by appointing full professors and their staff in each duty, and also, if possible, by establishing a teaching hospital, which is exclusively for the purpose of undergraduate education, and to divide it from a general hospital in which the community service as well as the postgraduate training of new doctors will be conducted. This plan has the support, also, of young doctors and students in medical school.

PFEIFFER: We are here for discussing the reasons, of course, for the student unrest. I was waiting in all these presentations to see what the real reasons are. While I am trying to dissect now what Mr. Yu brought out, as the last speaker of the student side, I think he was going into very old problems.

One is the problem that in the university, a professor has to be an academic teacher, a researcher, and a clinician. Everybody belonging to a faculty knows how difficult and how long the discussions are when a new opening has to be filled. When the different applicants are coming, there is the first-class man in research, but his teaching is terrible. Why not take the other one and leave out the first-class man in research? The other one is an excellent teacher, but as a clinician—would you go to him to be operated on, and so forth?

That is a basic problem, I think, which has been discussed at the medical facilities the world over for the last five or six hundred years, as long as there has been something comparable to academic medicine and, most probably, the old Greeks were discussing it in the days of Hippocrates. Certainly, I think that is no real new problem. I can remember from different occasions last summer when we were filling chairs, we had the students with us, and we had them voting for the people who were presenting themselves. In our country the system is this: if an opening is present in a professorial position, all the professors holding a chair in such specialty make propositions to the faculty. Each of them is permitted to give three names. In addition, the post is advertised in several medical journals, so about 30 or 50 names are given by the other faculties all over the country, and about 30 people apply for the position.

Then the committee gets together five or six people for selecting the man. About ten people are invited to give lectures. Each of them is given 40 minutes. On one such occasion, the students were absolutely taken by one man who brought out and presented the old archaic stuff—but he was a beautiful lecturer.

I think it is a rare combination to have a man good in research *and* in teaching *and* in clinical medicine. Of course, it is true it is a rare combination, but sometimes it is present. However, when a time comes that the faculty is going to select people only according to their teaching capacity, the medical school is going right down the hill.

If research is not brought up as the first point for the reputation of the faculty, it is terrible. On the other hand, it easily can be arranged that people very poor in teaching can be brought back to the second and third row and will not be teaching the students all the time. But I think also it is a dangerous choice if you want to have people devoted only to teaching and the others to do research or a little bit of teaching.

This probably can't be solved, and I don't think we are solving it here; the students are not going to solve it either.

Coming from another country, there is one point I should like to bring up. When I first came to the States twelve years ago, I was a Fellow at Harvard University. I was invited by Dean Berry, and he asked me my impression of the medical school. I said that I was amazed how many people were teaching who had not the slightest capacity to teach. They were very young people, assistant senior research fellows, assistant professors, and nobody was even looking at them.

Then Berry said it is easy to pick them out and select them. Here, the students they have taught are going to show bad scores afterwards. That was the system which was at that time valid at Harvard University.

In the old European university, in which the big lecture halls were filled by the students, the lectures in general were good because only a certain number of people were entitled to give lectures. I remember that some of the professors I heard in my days as a student were just outstanding. They were excellent. But it was a small group only that gave the lectures.

I think the combination of the two is the right system: to have the good man teaching a big class, perhaps the introduction to some subject, and then to have the students divided for learning the details from many not so outstanding men.

What is my feeling after having spoken to the young gentlemen from this country and also to Mr. Yu last night? You have a very strict curriculum. What you have in the university in general is something like we have on the high school basis. The high school basis in Europe is absolutely strict and in France, Italy, and Germany, all over these countries, discussion goes on at the family table as to whether the children will pass the next examination.

I have been in German and French schools, and the French are even worse than we are.

Now, at the time when a student was entering the university, it was the old saying of academic freedom—he did have the time of his life. Nobody paid any attention to whether he was attending the lectures or not. He had only to pass the examinations. Such freedom was given to him. He was regarded as being mature, so it was up to him whether he was going to the lecture or not.

In medicine, it was a little bit different because they had strict examinations, and so they were the stiffest group among all the students. But as long as there is a very strict curriculum in the university and especially for the medical students, and as long as the students have to pass these examinations, as they have to do in this country, they should be taught a little more because they are depending on it. It is clear that they can go to the books.

Now, we shall discuss the problem which is a system in some of the private boarding schools in our country. In the high class level, between 18 and 20, only the subject is given and the pupil has to prepare himself. But the examinations are very strict.

What is the reason for having the unrest just now, among students on a problem which is as old as the time in which the world has been created? This, I can't find out.

DUMONT: I wanted to say something about what Mr. Yu said. In Europe the problems of communication between teachers and students are rather difficult, at least in Belgium and France, because there are so many students per professor. The professors are very often unaware of the students' feelings about their teaching. So, in Brussels, some students decided to create a questionnaire to learn what the students were thinking about the way the professors were teaching.

This questionnaire was very technical and rather long. It was received officially by the professors as a useful tool as long as results were kept secret. I have several here. Few people in the faculty dared object to this as long as it was used as a tool to allow them to make a better course. Results would have been excruciating for several of them, however.

Unfortunately, the technical questionnaire was refused by students as too mild. A more activistic, much more personal questionnaire was prepared which, probably because of its very extremism, has not been used. In this way student extremists proved themselves the best allies of the old feudal order.

YU: One thing I must emphasize, our comments were constructive, and were never on a personal basis. The second thing is that the teachers who did an outstanding job really got a lot of credit because we praised them often for the first time, and it was made public. It was a stimulus for the good teachers and also perhaps a motivation for the poor teachers to try to become good teachers.

We looked at the schools that didn't publish the results and which handed in their results to the professor, and found there is really a significant amount of difference.

It turns out that the teachers, who were really good in the first place, are the ones most receptive to the questionnaires, and the persons least

receptive to the questionnaires were also the teachers who were the poor teachers anyway.

The distinction between a good teacher and a poor teacher is not technique. It is desire. The good teacher wants to teach. No matter if he has a poor voice, poor delivery. If he wants to make a good delivery, the students appreciate it, and he will go out to the students and find out what is wrong with him.

The poor teachers are the persons who really aren't that concerned with the students.

CONDLIFFE: I have one question regarding the future areas of student activism. You said you would like to have behind you, as you moved along the academic ladder or whichever ladder you are on, self-renewing groups of students. Therefore, you talk to freshmen and so on. Of course, the freshmen coming in now, say four years behind you, are relatively close to you in general terms, but what gives you such confidence that this self-renewal or self-perpetuating system of review is going to survive when, in fact, experience does tell us, I think, that they invariably have to be re-created and at longer intervals?

You are not taking into account some of the future student attitudes. Attitudes will change; they come full cycle sometimes in a period of time.

I know, for instance, just within a family, say the youngest children, if they are spread out over a period of time, when they go to high school and college, they have very different views from their own brothers and sisters. I think you are describing something that may not happen at all.

YU: You may be right. But I am sure medical student activism is more than a fad. It reflects a sense of social concern that has not been snuffed out by the rigid academic process. I predict that the present medical freshmen and the succeeding classes of entering freshmen will be more vocal, more activistic than those classes presently in medical school.

ARREGUI: I should like to add something to the recommendations that have been brought up by Mr. Yu. Dr. Pfeiffer is very concerned about the reasons for student unrest. We have pointed out political reasons, and there are also psychological and sociological reasons. But I think that it should also be considered that medical education does have an effect upon the individual medical student.

One point that is very important has not been brought up—the grading system, the evaluation of the student. For instance, in our school—grades, *per se*, acquire a disproportionate amount of importance.

The student is very concerned about his grades and how he will acquire an A, B, or C. You ask a student, "Can you go to a concert tomorrow?" The answer is "No, I can't because I have to study for an exam." Then,

it is not a matter of learning; it is a matter of acquiring grades. Well, this makes a student a suffering animal with a biological-metaphysical anxiety. That is one of the reasons for the apathy perhaps, and some of the reasons for the violence, as mentioned earlier by Dr. Bosch.

If these things act as antigens, you have antibodies and students are indignant; they react and try to achieve the goals of reforming medical education.

PFEIFFER: You mean that the bad teaching is really inhibiting the chances of getting higher grades. That is the reasoning of the students?

ARREGUI: No, not bad teaching, but the exaggerated importance of evaluation. I mean that the teachers evaluate the students in such a way that the students are not concerned about learning but about acquiring good grades, and that has to be mentioned—and changed.

The evaluating system in our school is such that they grade us from zero to 20, and 11 is a passing grade. Then, differences between a 13 and 12 or 14 and 15 and such things decide whether a student will go to a good internship or bad internship or where he will go. It's so relative.

PFEIFFER: Is an evaluation from the students' side some kind of repercussion or reaction to the examination effected by the professors?

ARREGUI: Perhaps it is.

MILLS: I think that has a lot to do with it, too. You are trying to find a meaning for student unrest, and you have pointed out that the problems have always existed. Certainly. But at no other time have students felt so free to express themselves.

It is a phenomenon in student communication. It is a reaction to other things happening in other parts of the world. It is a feedback system that is building upon itself now. The problems have always been there. It is their expression that is important.

In reply to Dr. Condliffe, when he doubts that contacts or views will be perpetuated in student organization, I don't think it is as important to Mr. Yu that his views be perpetuated but that the contact between the students and the faculty be maintained so whatever views they may wish to be put across, can be.

I think that is what is important. I have no doubt the contact will continue and grow. They will integrate.

NORTH: The method of selecting professors as outlined in Germany seems to stress remoteness and the capacity of a lecturer to perform rather than the importance of student-lecturer contact. If you have a few professors giving fine lectures to 200 students, you will create student unrest rather than solve it.

Mr. Arregui complains about student evaluation. I accept that this is

a difficult problem, but I would be interested to hear whether the students feel they should be evaluated and, if so, how?

LLOYD: First, on student unrest, the only reason for the apparent student unrest in our country at the moment is the press. I don't think really the decision and views have altered greatly for some years now. It has just caught the press and holds the public imagination at the moment.

With respect to evaluation, whenever either a student or a member of staff comes up to me and says, "I have to teach you this because this is what you have to learn for the examination," it isn't really important or true, I think. Obviously, what is at fault is the examination because, in fact, if the examinations were correct and valid evaluation of the important information, then they would reflect accurately the form of education.

There is nothing wrong with examinations. Nothing at all. But what is wrong is when an examination examines you in something that is not really required. This is always the problem that arises again and again.

I did say before that I think the best method of evaluation is the method the Commission suggested, which is continuous assessment, and I think it should be assessment of things that matter. In other words, the teachers, when they are teaching you, should be able to look upon the examination as real assistance and some guidance as to what, in fact, we should know—not as something separate from educating them.

YU: This is in reply to Dr. North's question about what alternative method of testing, grading, or perhaps class ranking do you use if you don't have examinations. The model we have been using is the Western Reserve model. The philosophy comes from the fact that examinations, testing, and class rank are not used for the purpose of being able to determine who is in the upper third and lower third.

They are not used for the purpose of bringing honors or scholarships for the people who do well. They are not used for the purpose of getting a good internship. They are for one purpose—to help the student determine in what areas he knows the least, in which areas he is weakest. It is for the student's sake only that they give tests.

Therefore, since it is only for this purpose, the students walk into the examination room and write a number down. They don't write their names down. Each puts his name and the number in a separate envelope. The faculty grades it. They don't know who has done well; they don't know who has not done well. They grade it.

The numbers are then sent back to the deans of those who need special attention. The exams are given back to the students with printed comments instead of being kept and used as some type of standardiza-

tion. The guy who did the best on the examination will probably be the best pathologist, obviously untrue. They go back and tell the student where he is weak, and tell the student to go back and talk with his professor about it. They don't have class rank. They don't know who is number one in the class and who is number ten.

When they apply for internships, they don't have any one number that says number 1, number 5, number 28.

The one thing they do have is the national boards, which they take after sophomore year in the basic sciences, and the national boards after senior year. That is the only objective evaluation. The rest is subjective evaluation, more or less an autobiography of the student written by his professors, lab instructors, and those who knew him well.

The consensus is that this is a far better indication of the student and how he does as an intern than that number one, the class rank, which is determined by examinations and one's working for examinations. We think that is a self-defeating system.

ESCOFFIER-LAMBIOTTE: I wanted to answer Dr. Pfeiffer's remark about the student unrest. In France, at least, it has a very simple and logical reason. It is a demographic reason. It occurred in May 1968. It was supposed to occur in October 1968. It was just a bit ahead of time. But it had to occur for a simple demographic reason.

We had the baby boom of 1948 coming, and I remember one of the May leaders of the revolution movement stating once, in a special panel we had organized on psychoanalysis of that movement, and where everybody was talking about murder of the father and things like that—"Well, for me it was simple. When I entered the primary school there were too many of us. When I had to go to college, there were sixty in my class, and I had to fight like hell to arrive at the university. Now, I am at the university in the medical school, and I am told there is no room in the hospital."

I told you yesterday that in the south of France, there are only two beds of patients available for each medical student. This means exactly what Mr. Arregui said. How are you going to choose the two students among ten who are going to be able to learn their job? This problem didn't exist ten years ago, and in France actually we have 16 percent of the class every year going into the university.

As Mark Zelter said before, we are entering now into a period of our evolution where apparently everybody will be allowed to go into the university. But there has to be an intellectual revolution about the aim of the university.

First of all, where we are going to put the students—and if it is like sardines, as in France—we should know they can't feel anything but anxiety and revolt. Secondly, why do they go there and what for? That

is the employment context of the revolution. But it is extremely simple. It is just demography.

MILLS: I should like to go back to evaluation for a second and have a word about what happened at McGill. It is a demonstration of evolution in the evaluation of students. A few years ago students would write exams and the class list would be posted on a bulletin board with their marks listed down to one-tenth of a point, and they would be ranked. It was a traumatic experience, serving no useful purpose whatsoever.

A couple of years ago, they decided to change this and introduced a system (with which I am sure you are all familiar) of upper, middle, and lower thirds. But we found that the problem with this is that a student who is doing very poorly in the very bottom section of the lower third has no indication how he is doing. He can walk away smiling, while a person who expected to place in the upper third and only placed in the middle third, feels terribly disappointed.

People have no indication of how they are progressing through the system, only to be slapped in the face with a failure mark in the final examination. When we discuss how to evaluate students we seem, more and more, to think that a pass-and-fail system is a little bit better; that if we have class tests during the year, people who were doing poorly in the past can be spoken to and warned; and we think that continuous evaluation is a very desirable thing, but it currently places too much strain on our resources.

I think if a student knows he has to pass a course and isn't struggling to obtain the upper third or 90 percent, he can be a little selective about the material he studies. He isn't forced to study a mass of material that is put in front of him by a lecturer for the sake of knowing it. He can afford to be a little selective.

Thank you.

RUHE: How does he know more about his progress through the course of study by a pass-fail system, than he does with an upper, lower, and middle third system?

ARREGUI: By communicating with the teacher.

NORTH: The pass-fail system leaves an even less satisfactory situation, where you have two-thirds of the class coasting along doing exactly what they want to do with no incentive.

MILLS: I don't think so. I don't find it that way. If exams are to be learning experiences, then they should be returned to the student after being graded on a pass-fail basis. I don't think student incentive is particularly warped by a pass-fail system. You have to take the students around the passing line and talk to them and, of course, those that are failing can find out what is going wrong, if anything.

RUHE: That is "pass, borderline, and fail" then. You have a three-class system. The history of these things is very fascinating. School after school has gone to a pass-fail system at some time in its history over the last fifty years. Invariably, they do this because people agree, at least in principle, that striving for grades is in some way demeaning to scholarship, and that the effort to gain a certain level of performance is not compatible with free intellectual attainment. However, almost inevitably, after the two-class system is established, there is soon dissatisfaction with it both on the part of the students and on the part of the faculty, because the student who is just barely passing is in a precarious position, but he doesn't know it. If he is truly ignorant, he may think he is leading the class when, in fact, he is a hairbreadth above disaster.

Usually the school goes to a pass and borderline and fail, which is a three-class system. Then inevitably some people say, "It really isn't fair to the man who is leading the class not to have some distinction," and "There is no incentive for the top student to demonstrate leadership." So then, you have to have *honors*-pass-borderline and fail, and you are up to a four-class system. Usually, the school eventually goes all the way back to the traditional five-class system in American studies, with grades of A, B, C, D, and E, where you have a group in the middle.

Frankly, I don't think there is a whole lot of difference between a system which has an upper, lower, middle third, with a failing group, also—a four-class system, and an honors-pass-fail system, where you take the man who is borderline aside and talk to him; this also becomes a four-class system, because you have identified a separate group as borderline. I fail to see the distinction.

KREVANS: There is another point which I have seen, sitting in the seat of someone who has to select interns, and since in the United States system at least, there is competition for positions—there is a selection process for the postdoctoral, clinical educational period. There are schools that don't give grades and send summation sheets. The effect of this is not that the student doesn't get graded. Instead of being graded by his own faculty, he is graded by the selection committee for the internship, and, as offensive as grading is and as subjective as it is and as unimpressive as it is, my own belief is that it is better done by the faculty than by the intern selection committee, because when we get students from Western Reserve or New Haven or a number of other schools where they don't give grades, we end up grading them; and I submit we are not as good at it as they would be.

YU: That is a good point. In other words, now you are going to be forced to give a grade on the subjective evaluations that they send you.

KREVANS: Sure.

YU: My one point here is that you assume that perhaps the number-one

man is better than the number-four man. We think the system of numerical ranking is detrimental to the medical school environment. So we will let it be a harder job for the internship committee.

One of the doctors mentioned the pass-fail system. In that system you still know how you are doing on the system. You are not ignorant. You get the examination back and you find out how well you have done. If you have done very well, you know it because the examiner writes down that you have done very well. The only difference is the examiner doesn't know your name. He doesn't know who did very well.

Another thing–I see the schools have gone back to the old system, but in all the schools I know of, the first ones that started out without grading the undergraduate levels have been extremely satisfied, to my knowledge, with the system. Western Reserve had the system for a number of years. They are extremely satisfied. They think they have a better learning environment than most schools. Actually, the trend is toward a pass-fail system.

MILLS: How about student attitude toward the system?

YU: They like it. The crux is–here is what you have to accept, and I don't know if it is true or not–you will have to assume there is a certain amount of maturity in the students. Without the examination, he will nevertheless study the material. I am not saying that this is so, but that is the crux of it. As a student, I believe we do have the responsibility and maturity and the desire to be good doctors and will learn materially.

RUHE: But that isn't a true pass-fail system. If you are really telling the person where he lies in the spectrum; if you call him very good, what is the difference between writing very good on his paper and writing A?

YU: There is no record.

RUHE: That is anonymous identification of grade levels. This is different from a true pass-fail system where everybody is either passing or failing and knows nothing more about it than that.

MILLS: It is a matter of the final use of the grade. That is what is important to the student.

NORTH: The final use of the grade is the fact that life is competitive and internships are competitive. In the end, the grade is going to be used for postgraduate training. That should be an incentive to the student.

I can see virtue in some of the things that Mr. Yu mentions, but a number system is only designed to remove bias from the marker's mind–that is all. A wish to let only the student know what is happening and leave the rest of the faculty uninformed is of some concern because internship committees will have to do the grading that they are less competent to do than the faculty.

PFEIFFER: I should like to come back to that point. I think the exami-

nation is different from the different views: for the community that is giving the qualification for the license, like the driver's license, to a doctor; for the student, it is a meaning behind the enforcement to learn. Otherwise, you won't go to the books. None of us would have done so without being forced to by the examination which was before the board.

Now, the demographic reason, to use the examination for elimination, for cutting down—I think that is a very bad consequence of the present situation. We have an increase in population. We have an increase in the living standards in all countries all over the world. That means the number of students wanting to go to the university will increase from year to year, irrespective of the increase resulting from the baby boom after the war, which is now coming to the university, and also the fact that education is free in most countries.

I don't know how it is in France, but in other countries it is free. The education that is free in the socialistic country has created the most terrible competition among the students who want to go up. That means we are forcing the children from the age of six on to be in a highly competitive situation.

If you look at the system of the universities like Cambridge and Oxford, it permits them to pass once. If they are flunked, they are not permitted to repeat. When the exams go on in our country, everybody is in the office of the psychoanalyst for treatment, since we have to accept that we are living this life, we can't prevent that. I don't know what will be the consequence.

What Mr. Zelter has brought up—to create new chances—I think that is a real answer to the problem. We have to create new careers and industrial development will permit us to have new careers. But irrespective of the fact that only a certain number of positions for doctors are available, at least for doctors who are satisfied by their lives and their profession, we are creating an academic situation which is proletarian, and the situation will be worse afterwards.

SCHWARTZMAN: I submit that learning, stimulated by the need to pass an exam, may not be education at all. It may be precisely what is wrong. It is why we forget so much of what we learn. Learning which is motivated by the desire to know is more likely to produce long-lasting effects.

I think everybody agrees that the selection system in medical schools is in need of revision. I think Mr. Lloyd made a major point of that yesterday. The examination system within medical schools is in need of major revision. Therefore, in selecting people for positions for postdoctoral training, the grades assigned in medical school mean very little. In fact, if you try to correlate it with performance in a clinical setting—I won't say there is an inverse relationship but virtually no relationship.

In fact, a subjective analysis of that student's performance by people whom you know and whose opinions therefore make some sense in general, is the best guide.

KREVANS: I am not saying that you have to take class rank. That isn't the important thing. The thing is, I think, the school must make some commitment on the evaluation.

SCHWARTZMAN: Only that the student will be a good doctor or not. I don't think there is a difference between the 1 and 19 and 37.

KREVANS: The Harvard letters don't give class rank but after you read them over the years, you learn that they rank them by phrases instead of with numerals. If someone is in the upper quarter, they use a certain set of words. If they have someone lower down in their opinion, they use another set of words.

However, they start out by saying every Harvard student is sensational. But some are more sensational than others, and you learn how to read these letters; they are very useful because they do commit the school's opinion as to how good a student is among the great ones.

We also get the truly, purely descriptive autobiographical letters, and what I do for these is what Dr. Schwartzman said. After we get these candidates' applications together, I call up somebody I know and say, "Come on, which of these guys is the best; which is the second best in your opinion?" I do this because I think his opinion is better than mine.

MILLS: What role do grades have in the formation of these letters? What precise role do they have?

KREVANS: It depends on the school. Some of the schools' letters are totally useless.

LLOYD: The important thing is that the phrase and the number don't relate to each other. Well, this is a fault of the examination for if an examination is a true evaluation of what is important, then the grade will be equivalent to a phrase and you can use it.

The problem is that often examinations that we receive at the moment don't test the things that are important in terms of clinical performance.

QUERIDO: I am listening to this all with great astonishment but, of course, it is the system of the existing societies in which you are representative, but, for instance, Dr. North simply states our society is a competitive society. Maybe there are other people who think that this is not the aim of society. Not only that, the second prerequisite for having a competitive society is equal chances for everybody. Equal chances for everybody means equal social environment for everybody, leading to schools of equal quality.

I bring this up because, as I said yesterday, in Holland competition is looked upon as something very bad. That is a funny situation which I find difficult to work with because of the multiple functions of the medical faculty. One has to educate medical personnel for medical care, but the task of the medical faculty is also advancing the understanding of disease, doing research. These are two different things. And the problem in Holland is whether for those that have to deliver medical care, the same criteria should hold as for the advancement of science. I don't know the answer to the problem, but I bring it up because this side of the mirror has not been discussed at all.

KREVANS: Other comments?

CONDLIFFE: It seems to me we come back here to what Professor Pfeiffer touched on, and I think you too, Professor Querido—what really is the purpose of the university and part of its graduate system that we call the medical school here? This is the heart of the matter.

We face this, as Mr. Yu mentioned earlier, in the National Institutes of Health, both as a research organization and also as major supporters of the research establishment in this country. We face it internally in our selection of clinical associates and research associates, which is a most difficult situation, and we end up doing what Dr. Krevans says. We call people or rank people, if we don't get grades on them or some basis on which to decide whether we want this man rather than some tenth man down on the list.

The purpose of education is the thing that concerns me and this, quite frankly, is one reason we are holding this first colloquium as one of a series. Are we just providing society with technicians? Are we just providing society with educated people? If so, why does society want more educated people than it used to want?

This is the problem in the demographic explosion that people keep coming up against, which imposes the necessity for selection upon us. This is going to be a continuing debate as I see it. I don't believe either that there is a solution to this question—everybody wants to go to the university. Parents in some societies want their children to improve themselves more than do parents in others, apparently, but nonetheless the demographic explosion is in a way masking the real question of why must we have more people going through higher education in the present age than in previous ages. This is why there are 6,000 students in Paris trying to get into one little building that is designed possibly to hold 100.

So I think this is the heart of the whole question about student unrest.

QUERIDO: If I might come back to that, I think that the main problem is that we shall have to design a system that is so open with crossroads that we shall be doing the same with regard to structure in the medical faculty as the science faculty has done long since.

What I mean by this is that if you want to give equal opportunity for everybody, or to those who at a certain stage in life are developing later than another, or whose motivation is changing, you must make it possible for them to switch after a certain level of education to another level of education. This cannot be done in our medical faculties because the curriculum is sequentially arranged. We start with normal, going to pathology, ending up with the vocational training.

Suppose we could make different levels of knowledge of normal and abnormal structure and function, and create at these levels different pathways to training of paramedical personnel or to technical schools. Then we are really breaking open a situation, and we don't need to have this heavy selection going on for the classical sequential curriculum.

What we do then is deliver trained people of different abilities, who will be happy in life doing a certain job, which is not equal to another job that somebody else can do after an education of two years or five years longer. I think the main problem we are talking about at the moment is how we can break open the medical faculties along the same lines as the science faculties have done for many years.

KREVANS: I think you are being a little optimistic and perhaps even a little naive.

In his *Brave New World,* Mr. Huxley worked out a system in which your idea would work, but you remember they had this lovely system where the developing fetus was exposed to certain truths, and the truth Mr. Huxley defined as 64,000 repetitions. As the developing eggs were predestined to become alpha, beta, gamma, and delta, the developing eggs were exposed to conditioning which taught, "I am glad to be a beta; I don't have to make the important decisions that the alpha has to make."

By the time that individual fell into his role in society, he was happy and the gammas were told, "It is more fun to be a gamma. You have your evenings off and get more pills."

And the deltas who did the heavy labor were told something else. But in a truly noncompetitive society, could I play the piano? I don't care how much I study, I can't play the piano.

I think we must be realistic. There is no way society can turn me into a piano player, no matter how much I aspire to it. There are going to be people whose aspirations are unmet who can't achieve the sort of thing Dr. Chiappo mentioned in his first talk. One of the reasons that we are seeing this unrest is that there are a large number of people who have aspirations that they can't achieve, and I don't think there is any way to alter the system that will make success out of failure.

QUERIDO: The point is not that we can meet the aspirations of all people. We will never do that because these aspirations will change from their 20th year to their 50th.

What we should do is create more possibilities. It is not an all-or-none story. It is a story of different forms and levels of higher education. In medical education, it has not yet come because we have still the monolithic system, even if we play around with things like electives.

DUMONT: I think there is a conflict between two tendencies. We want, on the one hand, to have people during their first year of medical school to be more motivated so that we can send them on to the hospital. To do this, we are already specializing them earlier than before. This tendency is very strong in the student movement in Belgium and France. On the other hand, there is a tendency to change the school of medicine and the medical curriculum so as to turn out people whose wide education allows them many different career opportunities (MD's, researchers, dentists, technicians, nurses, kinestherapists, etc.). These two tendencies of the revolutionary movement are contradictory. Either we broaden the base of the curriculum to enlarge the range of future careers, in which case the first years need no longer to belong to the medical school; *or,* we specialize medical students early to motivate them from the very first years after secondary school, but then the medical school becomes a professional school and the output of such a school should be geared to the needs of society and not to the desires of the students.

ZELTER: I think you have been assuming up to now that there should be one type and one type only of MD, which is not necessarily a good thing. Medical professions are leading to so many different things that I am not quite sure that our will to find a common path for all will lead us all to success.

Uniformity and equal opportunity must not be mixed up. They are two different problems altogether. I don't think that the aim of education is to make success out of failures, as you said before. I think it is to give, as much as is possible, to each individual the feeling that he made as much as he could of his life and his abilities, which is not the case at the moment because we are in an entirely repressive system and not at all in a promotive one, right from the beginning of our educational process. In the primary schools and even before, we give the feeling to all children that to get a good position in life you have to be first, whatever it may mean.

RUHE: There are several things running through my head because the last time I raised my hand, it was three speakers ago, but each subsequent one has said something that stimulated me. I think it is all part of the same thing, though. I want to return to something that was a point of discussion yesterday, because I think it bears on this.

That is a question of whether everybody who aspires to a career in medicine should be permitted to enter medical school. I think there were

several comments to the effect that this was not good for the system. But it seems to me that the evidence for this was based on the fact that a medical faculty was overwhelmed by an unmanageable number of students, many of whom were obviously not qualified for the study and perhaps not motivated for the study, and the facilities, the faculty, and resources weren't quite adequate to cope with these numbers.

That isn't quite the same thing as assuming a system in which adequate facilities, resources, and faculty are provided and then access granted to this system for all qualified students, with a proper ratio of faculty to students and a proper opportunity to study and proper exposure to patients—all of these things. I don't think any country has sufficient resources to enable it to do so. But, I was very much interested in it because, as some of you may not be aware, in this country we have recently taken a point of view that we should go to this kind of system after having had for many years a highly selective system, where we didn't have enough positions in the medical schools to accommodate all the people who wanted to enter them.

We have had a selection process which has been maligned somewhat, but I have yet to hear some improvement over the present system suggested. But the fact is that a couple of years ago, for the first time in modern times, the American Medical Association and the Association of American Medical Colleges together made a public statement to the effect that our national goal should be a system of medical education in which the collective enrollment of medical students of all the medical schools should be sufficient to permit every qualified applicant to be accepted.

Now, the word "qualified" of course implies some judgment on the part of somebody as to who is qualified and, in fact, what you mean by "qualified." Assuming that the definition means persons who are capable of mastering scientific work offered to them in the medical school and who otherwise have the characteristics that you would like to see in a physician—of compassion and some idealism and some motivation to help solve the health care needs of the public—assuming that you define "qualified" in this way, the estimate is in this country, by persons who are involved in the selection process of students, that there are somewhere between 2,000 and 5,000 students each year who possess these qualities and therefore are qualified, but who can't gain access to a medical school because there is not room for them.

We currently are admitting close to 10,000 medical students, and we have approximately 19,000 applicants. Our studies of those students who are in the secondary school system now, and in our undergraduate college system in premedical programs, show that this ratio, which is now approxi-

mately 2 to 1 across the nation, will increase to somewhere around 3 to 1 by 1980, even anticipating the expansion of medical schools' number and size, which is now going on.

In order to accommodate all these people who are qualified, we would really have to increase the capacity of our system by something between 25 and 50 percent. This seems unlikely to happen in the near future, but it has been announced now by the profession and by the universities themselves as a goal. This goal was further stated in the report of the President's Advisory Commission on Health Manpower, where the statement was made that the American public now believes that it is a right for every citizen to be allowed to go as far in the educational system as his qualifications permit him to go; again there is a question of what you mean by "qualifications."

But the whole system, the whole principle implies that as the person goes through the system, he will be judged by somebody, that he will have to demonstrate his qualification, and he will have to demonstrate his competence. Furthermore, there is a very strong human cry in the public arena today in this country and in the professional arena as well, that once having attained the goal as physician, he must continue to demonstrate his competence throughout his lifetime, so that periodically he is to be reexamined or reassessed in some way.

I don't like to use the word "examination" because it immediately conjures up a picture of somebody sitting down and writing an examination or taking the same test which he took when he was in the medical school, but some assessment of his competence, periodically, through his professional career will be called for if this goal is to be achieved. I should like to ask those of you who have been speaking on this same general theme whether you believe in this principle and how you reconcile it with the kinds of things you have just been saying.

I believe you said yesterday that no country could really honestly achieve a system such as I have described, where everybody who is qualified should be permitted the opportunity for advanced professional study in the profession of his choice. Do you believe that is so? Do you really feel that?

If so, then we are headed toward an impossible situation in this country.

KREVANS: That is a very difficult question you raised, Dr. Ruhe, and what I will do is give Professor Querido the lunch hour to think of the answer.

The first part of this afternoon's program will be the two papers: "The Relationship of the Social Security Administration to the Reorganized University Medical School" by Dr. Laugier and "The Relationship of the

Biomedical Research Community to the Reorganized University Medical School" by Dr. Dumont.

These two papers deal with tangential but, I think, related issues in the sense of: What are the effects on medical education of the system in which medicine is practiced, and therefore in relation to the problem of student satisfaction or dissatisfaction? Another, which has been mentioned by Dr. Yu, is: What are the relationships between the biomedical research community and the organization of medical school education, and therefore its relationship to the problems we had under discussion?

The first topic will be taken up by Dr. Laugier.

Alain Laugier

THE RELATIONSHIP OF THE SOCIAL SECURITY ADMINISTRATION TO THE REORGANIZED UNIVERSITY MEDICAL SCHOOL

I live inside a system. As a pure product of the French selective system, I believe it is the best, for because of it, I am with you today. Each of my colleagues here probably thinks his system is best—for the same reason.

Dr. Condliffe, who knows the French situation well, will probably make a few additional comments on it. Dr. Escoffier described it yesterday. Although I feel it is not as bad as she implied, I must say that all is not perfect in this "best of all possible worlds."

Mr. Yu this morning pointed out that medical schools should produce medical doctors who will give care to the community, but emphasized the fact that many medical schools in the most advanced of the developing countries are doing more research than teaching.

I should like to develop three points:

First, I shall describe the French national health insurance system, which is similar to that of most developed countries. I shall try to show that these *health insurance plans are, in fact, against medical education.*

Second, I shall discuss the clinical curriculum and the place of the hospital in medical education; and I shall try to show that *hospitals are against medical education.*

Third, I shall consider the future and discuss the problem of selection and the needs for health manpower in, say, twenty years

to come; and I shall try to prove that the *medical profession is against medical education.*

France is a relatively small country with 50 million inhabitants. Twelve percent of the population is over 65 years of age. In ten years this percentage will be up to 15. The needs of the elderly for medical care are well known to us all. Thirty-six percent of the French population is under 20. As little as ten years ago only 13 percent of the population was this young. (This explains, at least in part, the student unrest as well as the increase in the student population.)

Ninety-eight percent of the population is covered by some sort of health insurance; the majority, 60 percent, by the wage earners' social security. Miners have a system similar to the Kaiser Foundation in California. Farmers, students, and military personnel have their own systems.

Two-fifths of health expenditures are for hospital costs; 30 percent are for drugs; and 30 percent for medical fees, dentists, private nurses, and so on.

But the social security system does not pay equally for the various types of medical care. Ninety to ninety-five percent of hospital costs are either paid directly or reimbursed, but only 50 percent of all drug consumption is reimbursed.

The influence of health insurance commissions on the hospitals and, therefore, on medical education is obvious. We use more and more medical care, and we can predict that in the next 15 years, we will probably use three times as many medical services as we do now.

Medical care represents 7 percent of gross national product (4 percent 15 years ago), and 10 percent of personal expenditure (7 percent 15 years ago). Although the gross national product is increasing at a rate of 5 percent a year, medical expenditures are rising at the rate of 9 percent.

Social security administrators want to adjust the use of medical care to the capability of the nation to pay. They would like to limit the daily cost of the hospitalization and the duration of the stay. They want to reduce the physicians' fees at the hospital, are reluctant to pay for research and for new hospital facilities, and refuse to be involved in medical education.

In other words, they want to pay only for immediate medical care. They refuse to invest in the medical care of tomorrow by supporting medical education and research. I am afraid it is the same in every country.

In France we also have the problem of different types of hospitals. There has been a proliferation of small, private, profit-making, 50–100-bed hospitals. They are nice hospitals, devoted to surgery and obstetrics only. The middle and upper classes go to these clinics, refusing to be treated in public hospitals except for major illnesses. This has been encouraged in the past ten years when the government did not invest enough in hospital facilities.

Then there is the public hospital. Two-thirds of the roughly 330,000 existing hospital beds are in public hospitals. All the big hospitals are public; and they are, of course, operated by the local community on a nonprofit basis. These get all the complicated, expensive and long-term treatment cases that private clinics cannot or will not handle either because of their inadequacy or of the inability or refusal of patients to pay. Most public hospitals are, furthermore, old (many decrepit) and poorly managed.

There are two parts in "medical" France: on the one hand Paris, and on the other hand, the provinces (all that is not Paris). This situation exists in no other country with which I am acquainted. Parisians have reached the second stage, described by Dr. Bosch as the *critical* stage. In other parts of the country, Frenchmen are still in the first stage, which is *apathy*.

That is probably why the French student riots almost succeeded in Paris, but failed completely elsewhere. People were not prepared; and it will take probably ten more years before the revolution can succeed.

Roughly, 70,000 beds belong to huge teaching hospitals. In the past, there was just one medical school in each major city and all public hospitals were affiliated with this medical school.

In Paris, there are 33 hospitals with 24,000 beds run by a single administration, the *assistance publique*. Since the May 1968 "revolution," the school of medicine has been divided into 10 medical schools, and there we will probably be having conflicts between the 10 deans of the new medical schools and the single chief administrator of this huge hospital complex.

Teaching in a medical school is easy as far as the biological sci-

ences are concerned. As soon as medical students ask to go and see patients, they face problems with the hospital management.

In the third year of French medical school (equivalent to the first year in the United States), the student goes to the hospital, where his position is determined by his performance in a competitive examination, the *concours,* which is an old tradition. In the United States there is competition between medical schools, and the best students try to attend the best schools.

In France, there is competition between students inside the same medical school, but the hierarchy comes from the *concours,* which are organized by the hospitals' administrators in order to recruit *externes* and *internes.*

In Paris about 50 percent of the students are elected *externe* at the end of the first or second year of medical school. They are appointed *externe* for four years at the end of medical school. This French "residency" is almost a prerequisite in order to become a surgeon. That is probably why the French surgeons have such a good opinion of themselves!

If we make a cross-section at the end of the last year of medical school, we see that about 50 percent of the new MD's have been *externe.* They have had the opportunity to get excellent clinical training. Fifteen percent have been lucky enough, or clever enough, or active enough to become *interne.* The remaining 35 percent have had no official hospital responsibilities, and that is why they protest, for all medical students feel the need for clinical responsibilities.

In the past months, there have been reforms. All students now have clinical responsibilities from the second year until the end of their medical education. This means that the hospital must accept more students with clinical responsibilities, give them work to do, and pay them. They are paid $60 to $80 a month. A nurse makes $200 to $250. So it does not cost the hospitals a lot.

Nonetheless, money and instructive—as well as productive—tasks must be found for these new members of the hospital community. Such is the situation in Paris where the hospitals are large enough and can accept all the students without major problems.

In other parts of the country, the proportion was 30 percent for the *externes* and less than 10 percent for the *internes.* The

situation was worse in the other cities because of the lack of public hospital beds; clinical education was more passive than in Paris.

Now, I should like to tell you the problems we have in Paris with the hospital administrators.

In the Paris area there are 24,000 beds managed by the *assistance publique.* This was not considered enough for medical education because of the increasing number of students. Therefore, public hospitals, located in the suburbs and run by the local communities, have been asked to accept students. (There are only 3 million people living in the city itself and 6 million living in the suburbs). Unfortunately, these local hospital boards are reluctant to accept our restless students. Furthermore their medical staffs, who have no university rank and therefore feel a lack of prestige, have asked for university affiliation. But the academic community is unwilling to open its doors to these surburban medical staffs.

Paris has been divided into ten medical schools (Figure 1) against the plans of the Paris hospital administration which wanted to divide the hospitals into six different groups. In this contest, the Minister of Education won out over the Minister of Social Affairs. There could have been six complete and efficient medical schools with affiliated hospitals. There cannot, because of the geography as well as of resources available, be ten such ideal units. However, more medical students can be trained in ten imperfect units than in six perfect ones.

Most of the other hospitals in the city, which do not depend on the *assistance publique* administration, are located in the southern part of the city. They refuse to be affiliated and will not accept students. They do not want to pay for the *externes.*

In the suburbs there are many hospitals, some of which are good, but they do not want to pay salaries to *externes* from Paris because the local communities own their own hospitals. They try to escape their educational responsibilities.

On the medical staff at the University of Paris Medical School last year, there were 170 professors, almost 400 associate professors, more than 500 assistant professors, and about 1,000 instructors.

Ten years ago medical staffs were appointed by two different

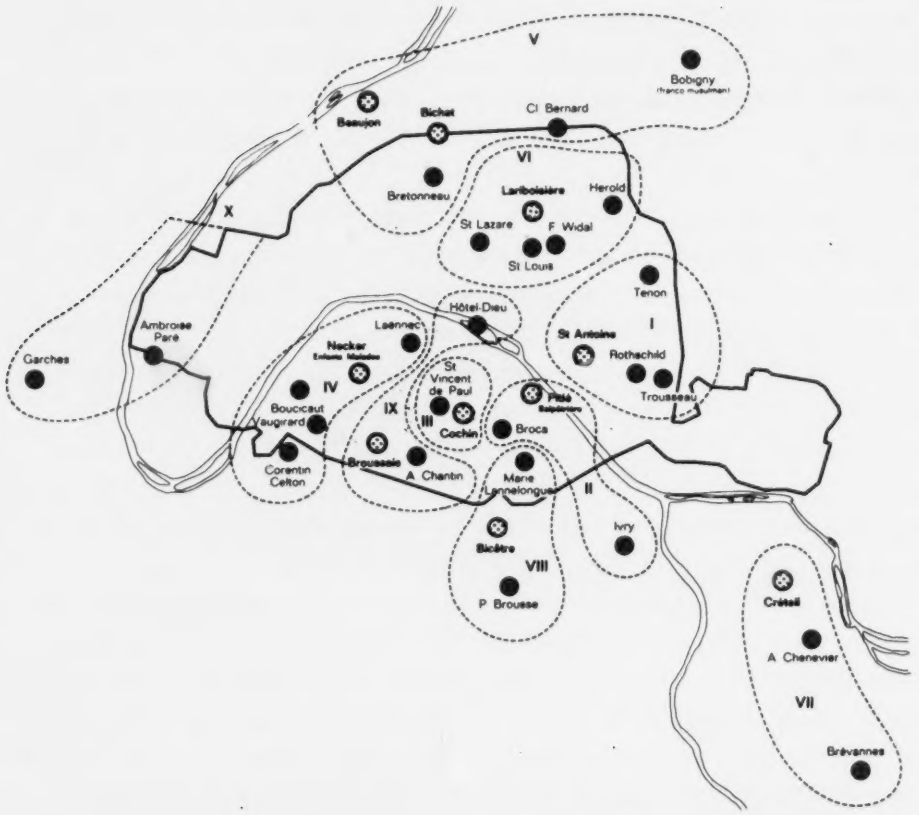

FIGURE 1 The ten medical schools of Paris and their affiliated hospitals. (Source: Laugier, A., and O. Rosanval. La sectorisation parisienne. Concours Méd. 90:8911–8923, 1968.)

systems: by the medical school faculty and by the hospital independently. Each system had its own type of competitive examination, its own hierarchy, and its own selective system.

First, let us look at the *faculty*. The first title is MD; a thesis has to be written in order to get it. There is no licensing examination such as that given by the National Board of Medical Examiners. The right to practice medicine is given by the university. The next title is assistant professor, but in the clinical fields, all the *chefs de clinique* must previously have been elected *interne* (you will recall that this position is in the hospital hierarchy).

Once they have reached this position of *professeur agrégé* (associate professor), by the last competitive examination, they are se-

cure. They are appointed forever. They become a kind of civil servant and are relatively well paid; the stage of security has been reached. Nine to fifteen years later, they are elected full professor. No more *concours*; they are elected by their faculty colleagues.

Second, the *hospital* has its own independent system of appointment. Once you have been an *interne* for four years, you can pass a competitive examination to become *assistant des hôpitaux*. Success at a later competitive examination will lead to the position of *médecin des hôpitaux*. This also is a permanent position. In Paris, the *médecins des hôpitaux* choose, in order of their seniority, the next service to become available, and every five or ten years they can change if they want to. In fact, these two systems of appointment are not completely independent because they concern the same people and there are some customary rules. A good student tries to become *interne*; he is then appointed as *chef de clinique* by the faculty, *assistant des hôpitaux* and *médecin des hôpitaux* by the hospital, *professeur agrégé* by the faculty, *chef de service* by the hospital, and at the summit of his career—*professeur*. This realistic but flexible system of promotion (of which I spoke in the present tense for convenience's sake) was eliminated in 1962.

Now a single system of competitive examinations leads to both hospital and faculty positions. This reform has been considered an improvement. Unfortunately, the careers are less flexible than before. Hospital staff needs and faculty needs are not identical—either in quantity or in quality—and a shortage of medical personnel arises in many fields due to this rigid organization. The number of positions to be filled is decided not only by the Minister of Education, who pays the faculty staff, and the Minister of Social Affairs, who controls the hospitals, but also by the Prime Minister himself who has to make some compromise between hospital and faculty needs.

The Board of Education has a limited amount of money to devote to medical schools, and the hospitals are no longer free to appoint the people they need and can pay. This absurd situation illustrates how the system is, in fact, against medical education.

Now, the last point, the selection of students and the needs of the community in ten or twenty years.

There is a shortage of physicians in all the countries of the world, but in France the medical profession does not accept this fact. It has the feeling that by increasing the number of medical doctors, the situation will deteriorate; medical standards will be lowered and individual physician's incomes will decrease. In fact, this is a false premise.

In 1965, Germany had 130 doctors per 100,000 people, Belgium 125, France 110. (Italy seems to have a higher medical density; this is partly due to the fact that all dentists are MD's in Italy.) Luxembourg and the Netherlands are comparable to France (Figure 2).

Figure 3 shows the geographic distribution of doctors in the European Economic Community.

One can easily figure out the area where the student riots will occur: in Paris, in Brussels, and one day or another, in one of those places in Germany where there are many doctors and medical schools. In these areas, there are almost 200 doctors per 100,000 inhabitants.

Argentina has approximately 150 doctors per 100,000 inhabitants. Argentina has more doctors than Sweden, England, or France. Sweden has decided to reach a medical density of 200 in 15 years. France is probably the 15th country in Europe.

Figure 4 shows an interesting comparison in the Soviet Union. In the USSR, there are two kinds of doctors: the full doctors (MD's) and the feldshers. The Russians believed 20 years ago that they could replace many doctors by feldshers. They did not succeed. As you can see the number of feldshers and doctors increased at the same rate; and now there are 200,000 MD's in the USSR—far more than in America and Europe. These are mostly females and mostly feldshers.

A Russian economist told me a female doctor is equivalent to 0.55 males as far as production of medical care during the course of a medical life is concerned. That is probably why they have such a high medical density.

In the past 15 years in all these countries—Russia, Germany, Bulgaria, Czechoslovakia—you see a rising medical density (Figure 5). The United Kingdom is right in the middle, and the United States is here with a constant medical density of about 140 from the beginning of the century.

You see the contrast between the United States and all those

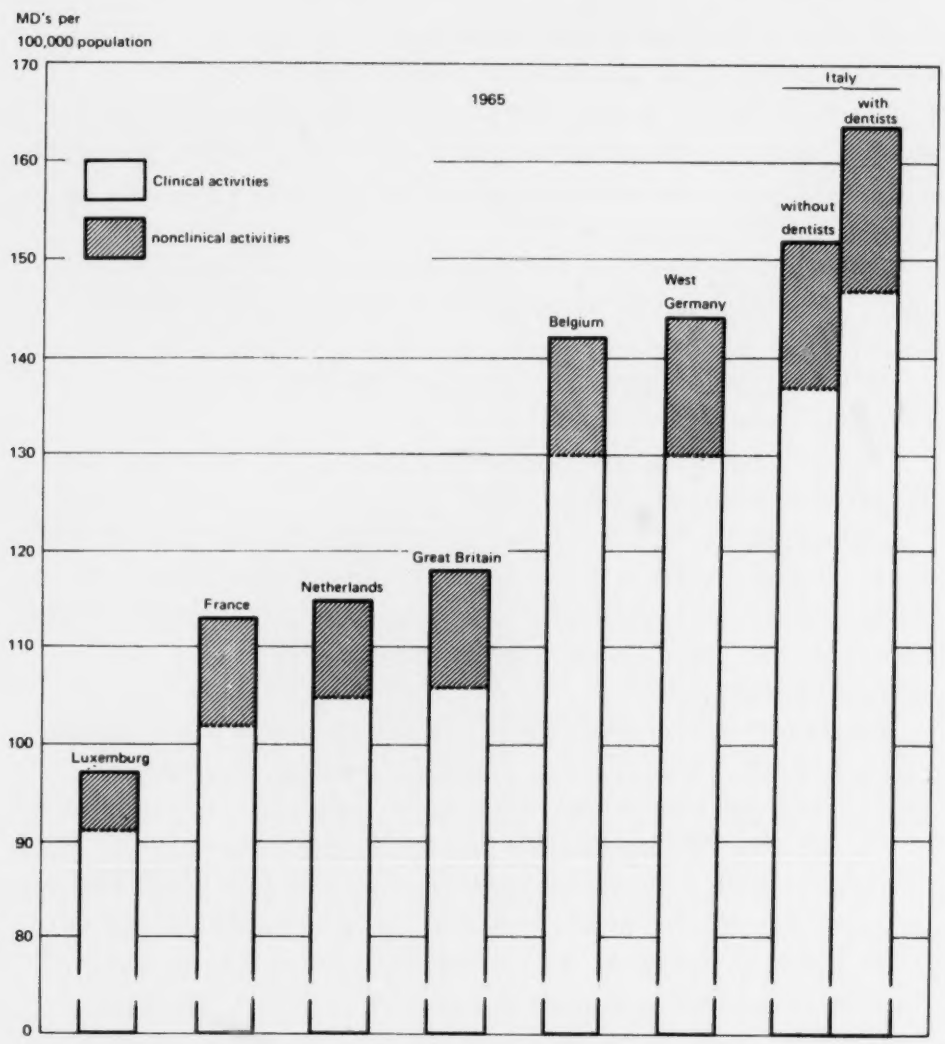

FIGURE 2 Medical densities in seven European countries—MD's per 100,000 population, 1965. (Source: Bui Dang Ha Doan J. L'Europe des Médicins. C. Sociol. Demog. Med. 9:76–84, 1968.)

European countries which increase their medical density, producing more and more medical doctors. Some of them go to the United States where about 20 percent of the doctors are foreign graduates, but most of them remain in Europe.

Twenty-five percent of the new French MD's are women. I do not know the figure in other countries. We see a difference between Paris and the rest of the country. In Paris five years ago,

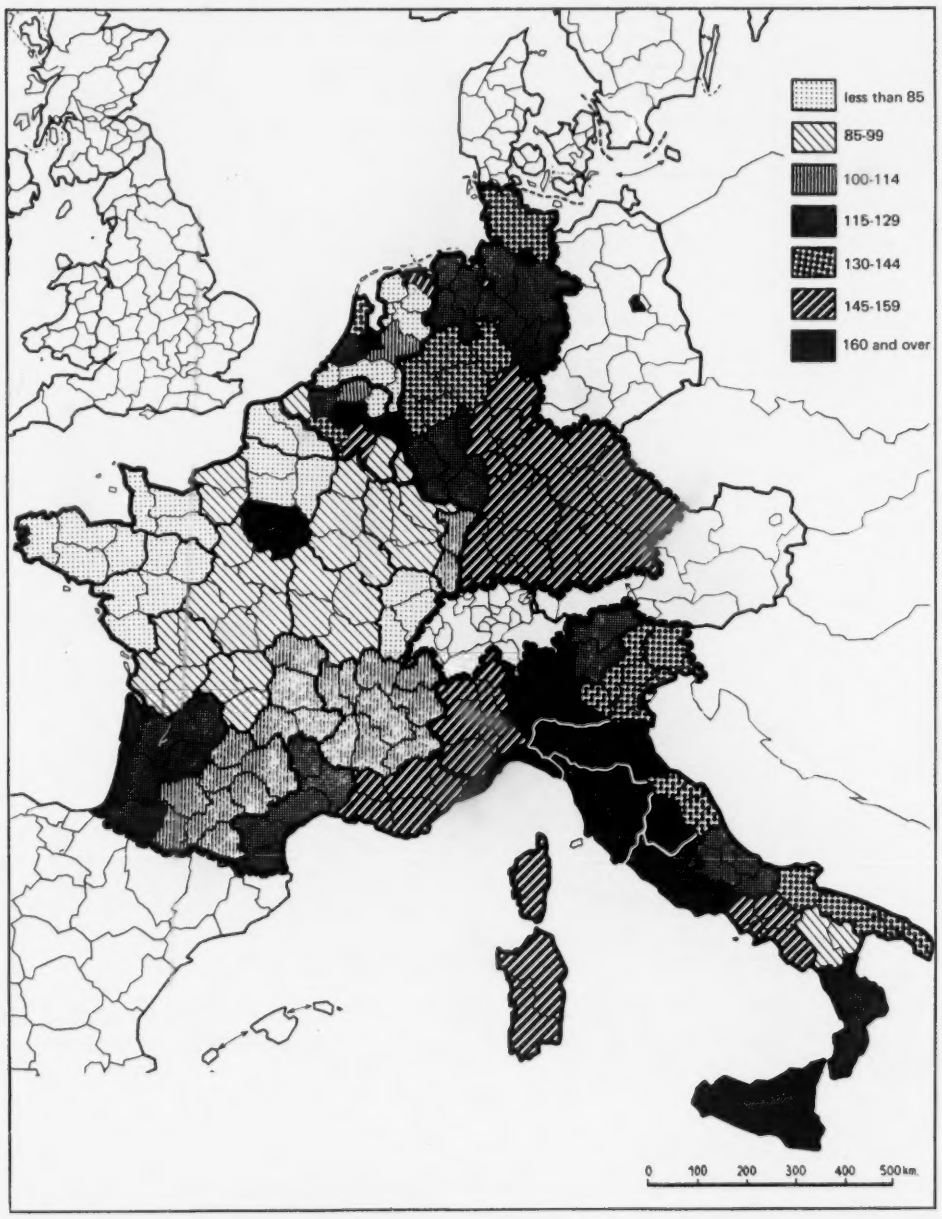

FIGURE 3 Regional distribution of MD's in the European Economic Community—doctors per 100,000 population, 1965. (Source: Bui Dang Ha Doan J. L'Europe des Médicins. Concours Méd. 91:4777–4781, 1969.)

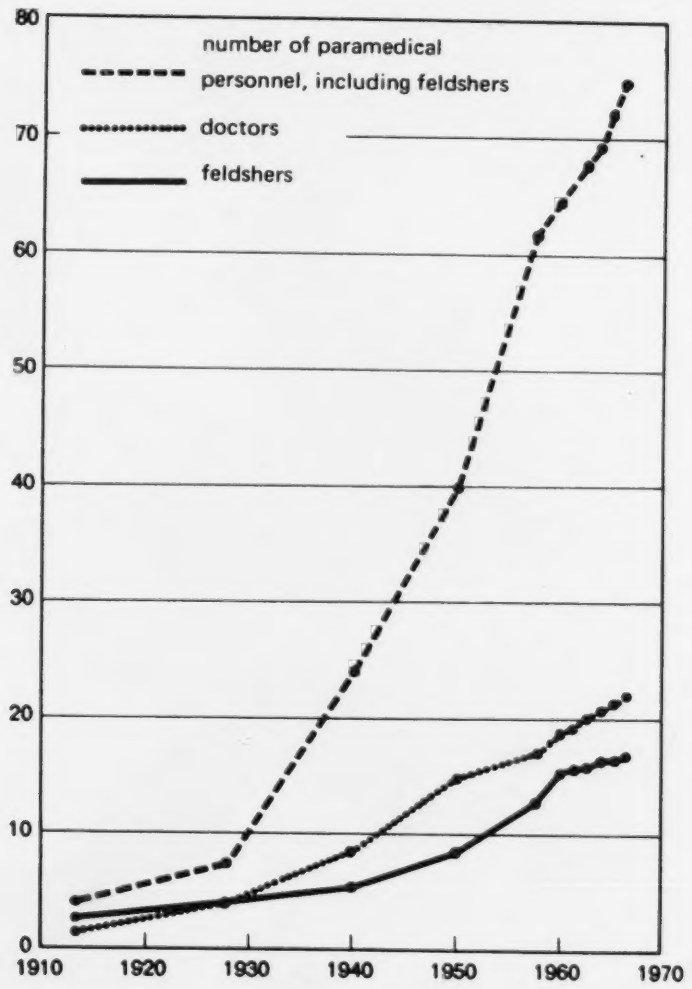

FIGURE 4 USSR: health manpower per 10,000 population, 1913–1965. (Source: Pequignot, H., Faut-il décourager les vocations médicales? Concours Méd. 91:341–350, 1969).

more than 25 percent of new medical graduates were female; in the rest of the country, less than 15 percent.

To summarize, I think that the social security system is not yet prepared to pay for medical education. The hospital accepts medical education as long as the students do not encumber the hospital—physically or financially. The medical profession wants to limit the number of new doctors for fear of a deterioration in the quality of medicine and a decline in the profession's standard of living.

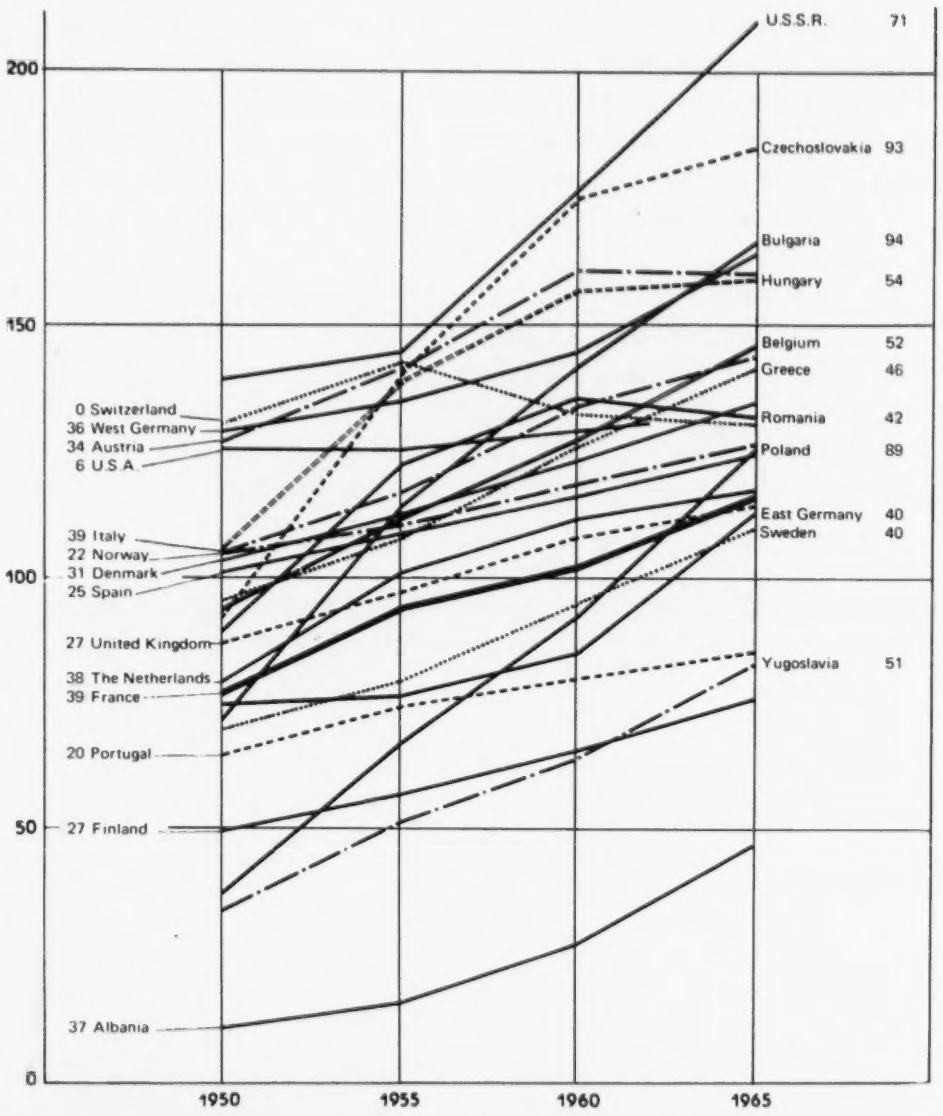

FIGURE 5 Comparative medical densities—MD's per 100,000 population, 1950–1965. Those countries on the left increased their medical density by less than 40 percent; those on the right, but 40 percent or more. The figure beside the name of each country indicates the percent increase, (Source: Couder, B., and G. Rousch. Medical manpower in France, Europe, and the U.S.A.: Past trend, present level and projections. C. Sociol. Demog. Med. 9:112–119, 1969.)

If we graduate 3,000 new MD's a year in France, it will be insufficient. If we graduate 6,000, which is the number we need in order to reach the medical density of the United States by 1980, the medical profession believes they will be second-rate doctors. I think this is wrong. The expansion potential of medicine is, furthermore, such that a plethora of medical manpower is quite unimaginable.

The increasing number of students in this affluent society, which is so concerned with higher education, is in conflict with two phenomena unknown to the French vocabulary: the intelligentsia, which is Russian, and establishment, which is British. Nonetheless, medical student unrest is directed against the intelligentsia and against the establishment in France.

Thank you.

KREVANS: I think now we will proceed with Dr. Dumont's presentation and then the remainder of the time will be open for discussion of the two papers.

Jacques E. Dumont

THE RELATIONSHIP OF THE BIOMEDICAL RESEARCH COMMUNITY TO THE REORGANIZED UNIVERSITY MEDICAL SCHOOL:

The Example of the University of Brussels

I am a researcher working in a EURATOM research contract at the University of Brussels. In fact, I am now the head of this project. As an outspoken critic of the structure of the medical school before 1968, I have been drawn into the reshaping of this medical school, which has been going on since June 1968. My participation has been mainly in the elaboration of a new constitution for the medical school. I shall mainly report on this experience, and I hope to bring up several points that may be of general relevance. This report is certainly biased by my personal opinions and prejudices.

BACKGROUND OF THE UPHEAVAL* (June 1968, Brussels)

The Country

Belgium is a country of 9 million inhabitants: 4.5 million Flemish, 3.5 million Walloons, and 1 million inhabitants of Brussels. Most of the Flemish speak Flemish, although a minority (5 to 10 percent) of them (mostly from the older upper class) speak mainly French. This minority is in the process of being eradicated by social, economic, and even legal pressure. The Walloons speak French. Brussels is mainly (90 percent) French-speaking, although many inhabitants could trace back their

*Much of the background of the revolt has already been described by Renée C. Fox in "Medical Scientists in a Chateau" (*Science* 136:476, May 1962).

origin to the Flemish. Flemish nationalism, on one hand, and the Walloons' refusal to learn the difficult Flemish language, on the other, are driving the Belgians apart. The division between Catholics and non-Catholics is also very sharp, having its roots far back in the history of the country. Besides, the Belgians are also divided according to political lines between rightists and leftists. Although it can be said that the Flemish are generally more conservative and mostly Catholics, the different boundaries are not superimposable. This makes a country with many compartments: in fact at least $3 \times 2 \times 2 = 12$. For ten years, however, there has been a distinct trend toward regroupment of the people as Flemish, Walloons, and Brusselers.

The Universities

There were in 1968 four universities in Belgium: two state universities—Gent (Flemish) and Liège (Walloon), and two private universities each having a Flemish and a French-speaking section—Louvain (Catholic) and Brussels (non-Catholic). Because they correspond to linguistic and philosophical divisions, the universities have very well defined constituencies and have little contact with each other. There is almost no possibility for a university researcher or employee to move from one university to another. The main consequence of this situation is a terrific inbreeding. This inbreeding, which is common to many European universities, results in an inward-looking attitude in general and in nepotism and "buddyism" in the budget or personnel choices of faculties. It has one advantage—the strong sense of identity of students and faculty members with the university.

Even though they get most of their money from the state, the Belgian universities, state and private alike, are very independent. They want to retain their identity and, therefore, to remain as independent as possible from a state that may be controlled by an antagonistic group. For instance, the University of Brussels has suffered much from the fact that Belgium has been ruled for ten years by governments in which representatives of the Catholic party have the majority. To keep their independence and to avoid troublesome political interference by the state, universities keep themselves in an atmosphere of secrecy, especially on budget matters.

The budget of the universities comes mainly from the state budget. It is divided approximately into 70 percent for teaching and the other 30 percent for research. Of course this division is rather arbitrary, since some professors, who should do research, only teach; while some equipment or personnel paid for by education budgets are used in research. The division of the budget between research and teaching is, nevertheless, a good approximation. University hospitals, which by themselves have a budget equal to the budget of the university, get most of their resources from social security reimbursements, state and city welfare department subsidies.

Medical Education

There are more than 10,000 MD's in Belgium. The output of the medical schools was around 500 MD's per year in 1958; it is now about 1,000, and from the data available on the number of first year medical students, one can guess that in 1973 the output will be around 1,500 MD's. It is not certain at all that Belgium needs so many physicians. At the rate medical degrees are delivered, Belgium will, within less than 20 years, count more than 500 physicians per 10,000 inhabitants—which, I think, is just too many. The students are not aware of this problem, but they have a diffuse feeling of insecurity toward their future. Also, the great increase in number of students has not been followed by a proportional increase of the faculty, which certainly decreases the quality of education.

The very great output of medical schools is owing to several factors, among which are:

Universities receive money from the state according to a formula based on the number of students. Administrations of universities have therefore no interest in limiting the number of students.

It is considered undemocratic to proceed to a selection at university entrance.

MD's have higher earnings than their other university-trained colleagues.

When students enter the university, they are about eighteen years old and have had six years of primary school and six years

of secondary school. The first year of the medical curriculum gives a general scientific education (chemistry, physics, biology, mathematics). It is followed by oral examinations, by which approximately three out of four candidates are rejected. The drop-out rate is very low thereafter. The next six years are divided into two years of general human biology (morphology, biochemistry, physiology, etc.), one year of general pathology and three years during which the students practice medicine in the morning at the hospital and attend lectures on medicine, surgery and medical specialties in the afternoon; they are on 24-hour ward duty approximately one day a week. All students get this hospital training. The tuition is very low. The examinations are oral. The medical school is open to graduates of any kind of secondary education.

The Brussels School of Medicine

There are approximately 1,800 students in the seven classes of the school; 85 percent in the French classes, 15 percent in the Flemish classes. The university operates with the town welfare department the two university hospitals (about 1,400 beds) and uses other public hospitals of Brussels for its teaching (about 800 beds). This situation raised two problems, which became explosive in 1968. The cohabitation of French-speaking and Flemish-speaking students and academic people in the same school had become difficult because of the numerical superiority of the French-speaking community and the ill-will of some of its members, and the aggressiveness of the Flemish. The university still had the same hospital facilities in 1968 as in 1948. The lack of expansion was attributed, on the one hand, to the unwillingness of Catholic governments and, on the other hand, to the close ties between university administration and the administration of the town welfare department, which prevented the university from starting its own hospital policy. The building in Brussels, after 1966, of a whole medical center for the University of Louvain made this problem more acute, with the possible threat of deliberate political strangulation of Brussels University hospitals. The faculty itself contributed to the danger by its supercilious policy toward the affiliated hospitals, which began to reconsider their relations with the university.

Structure of the University and Medical School

Before June 1968, the university was governed by a board of trustees. The members of this board were nine full professors (the rector or dean of the university, the two most recent rectors, the six deans of the different faculties), one delegate of the alumni, and 23 co-opted members, many of them also professors at the university. This board, largely formed by co-opted members, was the supreme authority of the university; it elected a president as head of the university, and an administrator as head of the administration; the rector who was responsible for academic matters was elected by all the full professors of the university. In fact, there was considerable overlap between these three authorities, and this overlap induced frictions and quarrels which in 1968 had nearly brought the university to a standstill.

On academic matters, the board of trustees very often ratified the proposals of the faculties. In general, the board was reluctant to contradict faculties' opinions. There was therefore a balance of power between these structures. The faculty of the school of medicine consisted of about 35 full professors with voting power and about 40 professors (with a wide range of titles) without voting power. Vacancies in professorships were filled in by faculty decision and ratified by the board of trustees. The title of full professor, the upper end of the academic ladder, was conferred only upon professors responsible for at least 60 hours of lectures. Because of the length of the academic ladder, seldom were full professors appointed before 45. Full professors retired at 70. The faculty was therefore very old, the mean age being around 60. The length of the academic ladder made it also very easy for the faculty to slow down the promotion of nonconformist elements. This weapon eroded the most ardent reformers into benign and resigned conservatives. The inbreeding that characterized the university, the small size of the faculty, and the age of full professors favored a provincial outlook and, in appointment matters, nepotism, "buddyism," and conformism. There is truth in the contention, very often expressed in June 1968, that the school of medicine was the private garden of a few influential families.

As in most European universities, the title of full professor carried tremendous power. The full professor was appointed for

life; he was therefore immovable. In effect he did not have to give any account of his activities. The authority of the professor was complete in five areas:

1. The teaching of his discipline (biochemistry, physiology, etc.)–the chair. The professor was also for the rest of his academic life *the* authority in his field;
2. The direction of research in the laboratory attached to the chair;
3. The administration of his department (in the hospital), of his laboratory (in the medical school), and sometimes of both;
4. General policy of the school–only full professors had a vote;
5. Relations with state, or exterior authorities–the full professors of the four universities were automatically the national experts for their discipline, whether at the National Science Foundation (where they constituted beautiful cake division committees) or in any national committee.

The coupling of five powers in the same person was sometimes explained by the necessity of coordinating teaching, research, clinical activity, and external relations. Many professors very often also carried on some outside activity, private practice, for example. In fact, the full professors were inundated with responsibilities. Consequently, they lacked competence in the different fields that they had to cover, lost the competence they might have had at the beginning of their careers, and therefore lost the natural authority that goes with competence. The intellectual insecurity of professors easily led to dogmatism, to poor acceptance of criticism and to the fear of intellectual challenge, and therefore to a benevolent tolerance of mediocrity. As a body, therefore, the faculty was characterized by utmost conservatism and conformism, poor adaptability, old and provincial outlook, nepotism and the prevalence of particular interests over general interest. The college authority of the faculty on matters of general politics led to a policy of "do nothing and bury the problems as they come." It is no wonder thar in June 1968 nobody dared to defend the record of the faculty.

The Career of the MD

The career of the MD was very different for clinicians and for the teaching staff of the preclinical curriculum. The latter group, the "fundamentalists," were paid much less than hospital staff. They enjoyed, however, a career with no great problem, the promotions being quasi-automatic. The fact that a career in fundamental science did not provide any outlet outside of the school obliged the MD or PhD engaged in such a career to remain definitely at the school, thus preventing any significant turnover in the staff. Security and lack of competition did not, of course, induce or sustain enthusiasm and aggressiveness in research. The financial situation, the lack of intellectual challenge and of possible career alternatives, did not appeal to young aggressive minds. In fact, in 1968 the recruitment of MD's as fundamentalists had nearly vanished.

The career of the clinician was characterized by its ambivalence. Promotions were decided by the faculty mainly on the basis of scientific merit. This obliged the clinicians to compete in an activity which for them was secondary—research. This gave rise to much frustration. The clinician resented being judged mainly on nonclinical achievements. On the other hand, the faculty, aware of the difficulties of carrying on research and clinical care of the patient at the same time, tended to lower scientific standards for the *thèse d'agrégation* (successful defense of this thesis gives the right to lecture at the university). To facilitate their research, clinical departments created their own laboratories, which sometimes carried out fundamental research. These laboratories in time became well endowed. This situation frustrated the fundamentalists: either the research groups in clinical departments were scientifically inferior and, therefore, a waste of money, or they were good and, in this case, the competition of such groups, with better-paid staff and good supply of money, was considered unfair. In 1968, the dissension between fundamentalists and clinicians had become acute, and the divided faculty was clearly unable to handle it.

At the beginning of the twentieth century, hospital MD's were part-time and unpaid. The trend toward full-time appointment and full salary has been steady and in 1968, most of the

"tenured" staff were paid as full-time employees, at salaries much higher than university salaries. However, young postgraduates were still largely not paid and some had therefore to do some private practice to earn a living, but were discouraged from doing so. However, many highly paid, full-time clinicians still managed to carry on large private practices or appointments in other clinics or hospitals. This situation caused a justified resentment among young hospital MD's and university-paid fundamentalists.

The general tendency for individuals at all levels of the medical school to take part in too many activities—teaching, patient care, research, administration, private practice—precludes efficient performance. This situation, which may be a general feature of medical schools and perhaps of universities all over the world, was particularly apparent in Brussels; it created an atmosphere of general amateurism, which was strongly resented by young people.

THE MAY 1968 UPHEAVAL

Situation of the University and the Medical School in 1968

In 1968, internal conflicts had nearly brought the university and the medical school to a standstill. At the level of the university—

There were conflicts between French-speaking and Flemish sections and between the university authorities that tried to develop the Flemish section and the faculties that resisted this policy.

The administration, without being able to gather the support of the community, tried to produce some efficiency by short-circuiting faculties and therefore antagonized these faculties.

Conflict developed between the generation of 25 to 40, which felt itself the more competent but had no power, and the older generation which clung to its prerogatives.

Conflicts of authority arose between president, rector, and administrator.

There was latent conflict between students and university in

general. The progressive increase in student population had nearly dissolved the already tenuous links between university administration, faculties and professors, on one hand, and students on the other.

At the level of the school of medicine, there was conflict between clinicians and "fundamentalists," and a general dissatisfaction about the conservatism, the nepotism, and the total inefficiency of the faculty, and about the absence of any hospital policy. In the student body, there was a diffuse feeling that the future was gloomy, the curriculum inadequate, and the teaching obsolete. On the part of the medical alumni, and more precisely of the MD's of associated hospitals, there was a growing anger toward the supercilious, restrictive, and inward-looking attitude of the faculty.

In 1968, two revolts were slowly under way—faculties and professors against the "progressive despotism" of the administration, and assistants and researchers against the feudal organization of the faculties. In the school of medicine, the latter revolt was not an organized movement but rather a diffuse pressure on the faculty. It was spurred by the discontent of many young researchers who had been trained in the United States and who could no longer endure the suffocating, stuffy and immobilistic atmosphere of the school. Such feelings were expressed more and more, at meetings of groups belonging to or external to the medical school. As for the students, they were aloof. Their diffuse uneasiness expressed itself only in a satirical revue; they showed little interest in a reform of the curriculum or for the structure of the university. In fact, at debating conferences organized at the school of medicine on "Medical Education," and at the university on "The Future of the University of Brussels," few students showed up.

May 1968 at the University

Against a background of general student aloofness, the mass media began in May 1968 to deliver an overwhelming flow of information on the May revolution in France. The influence of television which concentrated during this period on the most

exciting features of the revolution, mainly street-fighting, can hardly be overemphasized. After 15 days of this conditioning, on May 22, the students in Brussels discovered that they had a problem, and they invaded the university administration building. To be more accurate, let us say that this occupation had been preceded by a growing agitation. For many of the revolutionists, the occupation began as a big joke and their lack of motivation was expressed in disconcerting interviews—"We are against the examinations," and so on. True, they were pushed from the beginning and were soon more or less organized by extreme leftist groups, who had gathered a following in anti-Vietnam war meetings, by Belgians and foreigners coming from Paris, and by various agitators, including students and nonstudents.

The university authorities, probably torn by internal conflicts, were so much at a standstill that they reacted weakly, if at all, to the occupation. For one month, the central authority just vanished—it was a complete collapse. While the "free assembly," that is, the permanent convention of the insurgents, occupied the administration building, the board of trustees, under considerable strain and in cooperation with various reformers, managed to elaborate a new temporary constitution of the university. As a gesture of appeasement, the president and the administrator resigned. The new constitution mainly changed the composition of the board of trustees, and extended some faculty rights to all the professors. The new board of trustees was to be composed of the rector and the last two rectors, the deans of faculties (six), elected by their faculties, delegates of the professors of the (six) faculties (six), and of the institutes (one), the delegate of *chefs de travaux* (equivalent to assistant professors) (one), delegates of the assistants and researchers (five), and of students (seven), elected in each school or combination of schools, two delegates of the administrative and technical personnel, one delegate of the alumni, and eight co-opted members. The promulgation of this constitution; the excesses of the hard core of insurgents, who called for a general revolution and by whom the classical Communists were considered as reactionary; and lassitude deprived the "free assembly" of most of its supporters, and on July 10, the police called by the new president evacuated the insurgents.

The June Upheaval at the School of Medicine

At the school of medicine, the upheaval, while delayed, had more lasting effects because of several factors, among which were the grievances peculiar to the medical school, the fact that the medical school was much more reactionary than the other schools, and the existence, between students and professors, of a very articulate and energetic class—the assistants and researchers. The former factors gave to the movement a stronger motivation, the latter gave it strength and continuity. The upheaval can be divided into two periods: the phase of "contestation" and the "reform."

Contestation

The school of medicine embarked in the "free assembly cycle" at the beginning of June. These free assemblies were conventions of people interested in the school of medicine for one reason or another. At these meetings, the audience consisted of students, assistants, professors, MD's from various hospitals, nurses, technicians, and also of unconcerned people who came there attracted by curiosity or by political interest. These assemblies elected on the spot a president, who was supposed to control the debate, and decided about an agenda. Rules for debate reminiscent of some parliamentary rules were established. Presidents were changed each day and even several times in one meeting.

People requested leave to speak, and the president gave the floor successively to them. Anybody could get up and talk about almost anything, although the president was supposed to keep the debate within the frame of the agenda. Motions were proposed and voted on the spot. Debates carried out in this way were endless, and very tiring. The delay between an argument and the corresponding reply was enormous. At times one had the impression that the whole audience was dreaming. Free assemblies very rapidly got their own dynamics, each assembly deciding to hold the next assembly, very shortly. Most of the people did come back, and as important things might be said, the crowds

became larger. The duration of such assemblies (lasting often from 8 P.M. till 2 or 3 A.M.), the feeling of being obliged to prepare arguments, made the whole process mentally and physically exhausting for people who worked during the day. People were intoxicated by exhaustion, excitation, oratory, and massive psychoanalytical release. It was fascinating and somewhat frightening to observe a progressive change in the personalities involved, and in the opinions and sense of values of the participants.

The free assembly proved to be an extraordinary technique of agitation; some of its results and implications were good, others were frightening. On the positive side, its awakening power was astonishing. In less than two weeks, a whole sleeping community became aware of its stagnation and of the magnitude of its problems. Also, by relieving all inhibitions, the free assembly gave the floor to the long-repressed logorrhea of the crowd. In European-type societies, from primary school on, the sense of hierarchy and discipline severely limit the possibility of expressing oneself. This process was really a huge intellectual purge for the mass of attendants; people who had not dared to talk before began to express ideas. Free assembly therefore opened up many channels of communication that should never have become closed. On the receiving end, the assemblies also obliged people to escape from their own narrow problems and points of view and to put them in a more general perspective. Finally, the daydreaming quality of some of the discussions had a brainstorm-like quality; it evoked new and original ideas that might never have come up otherwise.

On the negative side, it must be said that the free assembly was easily subjected to crowd manipulation. Extremists could by skillful oratory or by tedious repetition push the crowd in a chosen direction. One of the techniques used was to propose motions when the attendance was suitable, either at the beginning of the meeting or at the end of the meeting, when all moderates had left. The motions were benign at the beginning, but were followed by more and more extremist proposals; extremist leaders convinced the audience that it was bound by previously voted motions; step by step the audience was progressively involved further and further in the revolutionary process.

The free assembly was also a very useful tool for intellectual

harassment. Even when they are not completely convinced, few individuals resist the pressure of a crowd that is stimulated by verbal attacks, violent satires, demagogic professions of faith and arguments, and political diatribes. Waiting-out and intellectual crowding-out of its opponents became favorite weapons of the extremists. Because of its very mixed composition, the free assembly as a body was always unable to evaluate the real weight of the speakers. It therefore let itself be led by persuasive orators, whose background should have prevented anybody from listening to them. Some fakes had their day of glory and led assemblies astray. Another dangerous aspect of the free assembly, especially for Cartesian-educated Latins, was the tacit assumption, which progressively became a dogma, that the truth will come out of general discussion by a crowd. Indeed, with its daydreaming quality, the free assembly brought out some new ideas, but mostly a lot of nonsense, and unfortunately it was unable to sort out the good ideas.

The process of rationalization was long and difficult. Its steps were the exclusion from assemblies of persons outside the medical school; the organization of separate meetings for the different groups (meetings in which people knew each other); the election by the assistants and researchers of a committee that elaborated on a program with alternatives; the vote of this program by regularly-summoned separate assemblies of assistants and researchers, on the one hand, and of students on the other hand. Each of these steps had to be obtained by vote of the assembly existing at this stage. This long process had two effects: it transformed a revolutionary movement into a reform movement, and it gave strength and purpose to the movement.

Thus, in my opinion, this process saved the medical school by avoiding a fatal clash and saved the movement from its own excesses. The rationalization process was the result of the work of a few researchers who alone dared to argue with extremists. The professors, with two or three exceptions, did not at any time reply to the torrent of abuse that was poured on their class, even though many of them came to the free assemblies. This was generally interpreted as a striking lack of courage; it did little for the prestige of the professional group. The appearance

of well-motivated and quite articulate bodies of student delegates and assistant delegates, together with the pressure of small groups of progressive professors obliged the faculty, at the end of June, to delegate to a reform committee most of its power and mainly the power to negotiate a new constitution for the medical school. The extended faculty accepted this covenant by a unanimous vote. This reform committee was constituted of fourteen delegates of the professors, fourteen delegates of the assistants and researchers, and fourteen delegates of the students, each group having veto power. To these groups, eight delegates of the associated hospitals, four delegates of the alumni, and eight delegates of the technicians, nurses, and workers were later added. Meanwhile, the extended faculty elected a new president and resumed its work within the limits allowed by the covenant.

The Reform

The creation of the reform committee began a long process of elaboration, discussion, and negotiation about the future of the faculty. The reform committee created commissions, which dealt with the various aspects of reform: education, hospitals, research, exterior relations, faculty structure, and so on. The commissions reported to the committee, which met at least once a week, all year round. The almost incredible number of problems left unsolved by the faculty obliged the reform committee to attack simultaneously many different questions. This fact, and the violent opposition between extremists on both sides, the deliberate wish on the part of many professors to slow down and put the committee to sleep, and the extreme efforts of the Communists and their allies to transform the school into an ideological base very much impaired the progress of the work. It is, therefore, quite an achievement by the community (but mainly by a handful of dedicated reformers) that on all the aspects of the life of the medical school well-grounded studies and proposals were made. The full documents, that I have here, will at some time, I hope, be published as a book. While doing this impressive work, the reform committee started a new hospital policy.

MAJOR ISSUES IN THE REFORM OF THE MEDICAL SCHOOL AND OF THE UNIVERSITY

Several major issues were discussed during the "contestation" and the "reform." Because I think these issues will come up sooner or later in most universities, I shall try to summarize them and give my opinions about them.

The Structure of the Power in the University and in the Medical School

Who should have the power in the school of medicine? Solutions went from one extreme—the faculty composed of professors—to the other extreme—a general assembly of MD's, students, technicians, and nurses—all with equal voting power. Key words of the groups were "order and competence" for the professors, "democracy" for the revolutionaries, and "efficiency" for us. We proposed to divide responsibilities between two bodies: a management committee and a senate with representation of all groups. In our idea, the management committee was to have a strong executive power, somewhat like the president in the United States; the senate expressed the general policy, voted on the budget, and controlled the management committee (with the possibility of dismissing it by two-thirds of the votes); the management committee was to be elected by all full time MD's or PhD's of the medical school, having four to five years of experience. In the senate, all groups were represented with a very large majority by the delegations of MD's and PhD's of the school, professors and assistant professors representing 44 percent of the vote. The final project has increased the responsibility of the senate, which elects the management committees. Similar discussions are going on regarding the university structure.

When the idea of representation of groups was accepted, there were many discussions about two groups: the alumni and the heterogeneous group of nurses, technicians, and workers. We defended strongly the idea that alumni should be associated with the management of the medical school and university. The arguments were as follows:

1. The role of the university in the continuous education (in French *récyclage*) of graduates is as important as graduate and postgraduate education. Graduates "in the field" are in the best position to judge graduate education they have received.

2. Alumni bring some fresh air into an introspective community; they represent the outer world; they have no personal or departmental interests to defend and therefore, may be considered impartial.

3. Alumni are the most natural political support for the institution and general support for young graduates. In universities which have a sharp philosophical orientation, alumni are naturally interested in the future of the institution.

The importance of alumni representation has been accepted at the medical school, although, surprisingly, it met some opposition from the faculty.

Representation of nurses, administrative personnel, technicians and workers in the senate has been a very "hot" subject. Leftists, who advocated such a representation, did it on philosophical grounds: all groups should be represented. Professors, who already opposed student or assistant representation, could not be very sympathetic; we objected to this representation mainly on the ground of lack of general competence. There is now representation of this group in the reform committee, and the results depend on the category: the delegates who come remain silent, although they vote; nurses are always present and seem interested; delegates of the technicians and administrative personnel mostly don't come, while the delegate of the workers almost never shows up.

In discussions about representation, the leftists defended the concept that political, that is, general decisions, should be decided by everybody and that all groups were able to take part in the decision; technical decisions should be the prerogatives of the experts. Whether this fine political concept may be applied to a mission-oriented institution such as the university seems doubtful to me. Indeed, experience has shown that in problems involving the whole future of the school, such as computer policy for instance, the decision is political, but it is impossible to take it without a minimum of technical knowledge.

Another important issue was the participation of the whole

community in the elaboration of decisions. This principle led to the concept of the "open commission;" that is, on any subject any interested person may show up and participate in the elaboration of projects. Professors were violently against this concept. While accepting the principle of opening a commission at the stage of information, we consistently opposed such an opening at the stage of elaboration. The risks of irresponsibility, general incompetence, and control by groups of such commissions seemed obvious to us. To the more radical reformers, these risks were acceptable if this method ensured the blowing-up of the log-rolling and pork-barreling games played in restricted committees. Our idea was finally adopted in the project of the reform committee.

Authority in the Department or Service

All reformers wanted to get rid of the feudal irresponsibility of department heads toward the university. Central authority of the medical school should be able to impose its views. There were a lot of arguments about the methods of choosing the department head: solutions proposed went from designation for life by faculty as before, to designation by the college of senior people of the department, or to designation and revocation by the general assembly of all the people (including dishwashers) working in the department. We proposed the designation by the senate on the proposal of the management committee. I think this solution will prevail. What is probable is that no reformer would any longer accept the tenure of a position, that is, head of department.

Information

Most reformers strongly resented the inward-looking attitude of the faculty. This attitude, which stems from inbreeding and generates inbreeding, is built into the European situation. Although the opening of faculties to alumni, to delegates of associated hospitals, and to students certainly betters the outlook, the real solution of this problem can come only from elimination of European provincialism and the organization of a European university system with an open market for brains and for institutions.

Let us hope that European countries will understand how small they really are!

Publicity over budget matters, policy decisions, and promotions was one of the main demands of reformers. Although nobody opposed this demand in general, it is already obvious that unless a continuous fight is carried on about it, this principle will often be conveniently forgotten.

Education

Demands of the students with regard to education were numerous. As these demands are somewhat similar to those already described in detail here, I shall not elaborate: integrated teaching, emphasis on psychiatry and social medicine, and so on. Students want a big say in decisions affecting the curriculum, and nobody objected in principle. Commissions composed of equal numbers of teaching staff members and students meet regularly for each class. An "open commission" was set up to study the general problems of medical education; it succeeded, thanks to the dedication of a few students, researchers, and professors who worked to interest a large part of the community. For a year, this commission has gathered 30 to 60 people weekly for a whole evening. The result of this work is impressive; definite and detailed proposals were made: (1) the creation of a Department of Medical Education; (2) medical education is to be considered as a field of study in itself; (3) introduction of optional courses; (4) introduction and experimentation about new techniques of teaching and of evaluation; (5) introduction of integrated teaching in the doctorate (last four years of the curriculum); and others.

The extension of integrated teaching to preclinical curriculum is very strongly opposed by the "fundamentalists," who cling to the superiority of teaching separately in the different disciplines.

The extent to which this opposition stems from the the fear of loosening their grip on this teaching and, therefore, on the control of scientific personnel and budget associated to this teaching is uncertain.

I should like to make one comment about the trend toward medical students' wanting more emphasis on public health, psychiatry, sociology, and nonacademic medicine. This ten-

dency is, in fact, a trend away from the basic sciences. If the evolution should follow that path, I am afraid that MD's will completely lose their grip on the scientific foundations of their work. They will therefore more and more downgrade themselves to the level of technicians of public health. That such a change is under way in many countries is suggested by the ever-widening role of PhD's in medical schools and hospitals.

The responsibility of the medical school in continuous education is now accepted in principle. It remains to be seen if this recognition will have practical consequences.

Hospitals

Commissions of the reform committee have drawn up detailed proposals for the closer integration of hospitals already associated with the medical school and those that would be associated with it. The planning of a new academic hospital is now well under way. How these proposals will be applied depends on the board of trustees of the university and on negotiations with state and city administrations.

Research

Assistants and researchers have been the backbone of the reform movement. Their demands were simple. They wanted research to be left to researchers and to become something other than the status symbol of teachers and clinicians. This meant the blowing up of the sacrosanct principle of unity of teaching and research that allowed old professors to control tightly the activity of research laboratories. The reform committee has proposed that there should be a clear separation of clinical teaching and research responsibilities. This concept does not imply that researchers should not teach or clinicians do research; it implies that teaching, clinical, and research positions are not necessarily related. Research units should be built around individuals whose competence is recognized; they should be autonomous with regard to budget, personnel and orientation of the research; they should be independent from chairs or clinical departments. The heads of the units should be full-time researchers, that is, they should spend

at least 9/11 of their time in research, they should be recognized as scientifically qualified (at least equivalent to a PhD); and they should be periodically reevaluated. The grouping of research units in departments should be voluntary and flexible. The commission, which would advise the management committee and the senate on research matters, should be elected principally by full-time researchers. Such concepts strongly antagonize professors and chiefs of clinical departments, as their application would deprive them of their most cherished status symbols—their names on large numbers of scientific papers. The success of this program remains quite doubtful.

CONCLUSION

Situation at the Present Time

The detailed proposals of the reform committee have been accepted by students, assistants and researchers, alumni, and the technical personnel; they have been received coldly by the faculty. Nevertheless, the extended faculty has agreed in principle to the proposed new constitution and will discuss, in a new reform committee, the details of this constitution. In the meantime, of course, the delays in establishing new structures have allowed the extended faculty to take over again many responsibilities. Reformers fear that the faculty will again begin a round of endless discussions in the hope of slowly regaining lost ground by exhausting the reform movement. If this is really the case, I am afraid that we are going to have a new upheaval in the near future and when that time comes, there will not be any moderates to prevent the clash. There are indeed ominous signs. On several occasions, the faculty has shown little understanding of the spirit of the reform. For instance, a commission designated to decide about a chair included the father of a candidate! Pressures are increasingly being applied to bring the recalcitrants back into line. It is somewhat amusing to observe that the tactics of extremists against professors during the "free assembly" are now being applied by the faculty against its opponents: waiting out the opposition, pressure of large groups on isolated individuals.

The linguistic problem is now being solved at the level of the

university by separating the French-speaking and Flemish-speaking sections into two distinct universities. This sad outcome will divide already scarce intellectual and financial resources.

General Remarks

The university revolution has brought out very clearly in Brussels a fundamental characteristic of Latin people: the opposition between progressive, intellectually advanced, expressed opinions, and inherent conservatism in practical daily life. According to this characteristic, people will advocate very democratic structures, but tend to short-circuit these structures or ignore them in practice. This trend makes progressive evolution very difficult and favors a sleeping stability with periodic upheavals. The existence of strong groups of die-hard conservatives and revolutionaries also favors such an evolution.

On the whole, the university revolution has had positive and negative consequences in the Brussels Medical School. Among the positive effects, I shall cite:

The awakening of interest in general problems in large segments of the community.

The elaboration of a whole set of programs that could bring the university out of the eighteenth century and into the twentieth. Modern management and education methods will perhaps enter the university!

The defrosting of human relations with the rejection in practice as well as in theory of the concept of dogmatic authority.

The opening up of the university to the outer world.

The emergence of a whole set of young aggressive MD's and PhD's with managerial talent.

There have been negative consequences too:

The whole revolutionary process has caused a tremendous loss of time and energy to the whole community; for many researchers, a whole year has been lost.

The weakening of the authority may have lowered temporarily the scholastic standards of the school.

The vacancy of power and, later, the duality of power in fac-

ulty and reform committee have favored power politics and may have further decreased the civic sense of some parts of the community.

The great problems of the feuds between Flemish- and French-speaking people, between basic scientists and clinicians, and between real and false full-time MD's have not been solved.

I cannot say if and when the new constitution of the medical school will be applied, or if it will be successful. It should represent progress when compared to the previous ones unless the present generation of dedicated reformers is followed by careerists or people susceptible to demagogy.

DISCUSSION: THE REORGANIZED MEDICAL SCHOOL

Julius R. Krevans, presiding

LLOYD: I should like to ask what the two speakers, Dr. Laugier and Dr. Dumont, see as the purpose of undergraduate education in terms of the sort of doctor required for future medical care in their own countries?

DUMONT: I don't think I am qualified to answer that question.

LAUGIER: Now, let's suppose we are in 1950 and you asked me the same question. Which kind of a doctor? A doctor who will go into private practice or a doctor who will not go into private practice and who will be in an administrative, research, or hospital position?

Fifteen years ago I should have said I don't know. Probably we need both kinds of doctors. Now, let us consider what has happened. There has been an increase in the total number of doctors from 90 to 118 per 100,000 population. The number of doctors in private practice has increased only from 75 to 88. Some of them have a part-time hospital position.

Had we been able to predict this trend, we should have known that the need was to train more doctors who will not be exclusively involved with the community patient in private practice.

I cannot predict the situation 20 years from now, but from this trend we can postulate that the number of doctors in private practice and family doctors will increase slowly, whereas there will be a larger demand in hospitals, research, teaching, administration, and so on. So the kind of doctor we will need is a doctor able to be permanently educated during the next 30 or 40 years, which means that he must be able to read, have time to read, have hospital contacts, and be open minded.

I do not know how one can select this kind of person and I do not know how one can train him and keep him open minded and curious. If you have any recipe, give it to me.

PFEIFFER: This shows how small a percentage of the graduates go into private practice, and also that the requirement for medical education for edu-

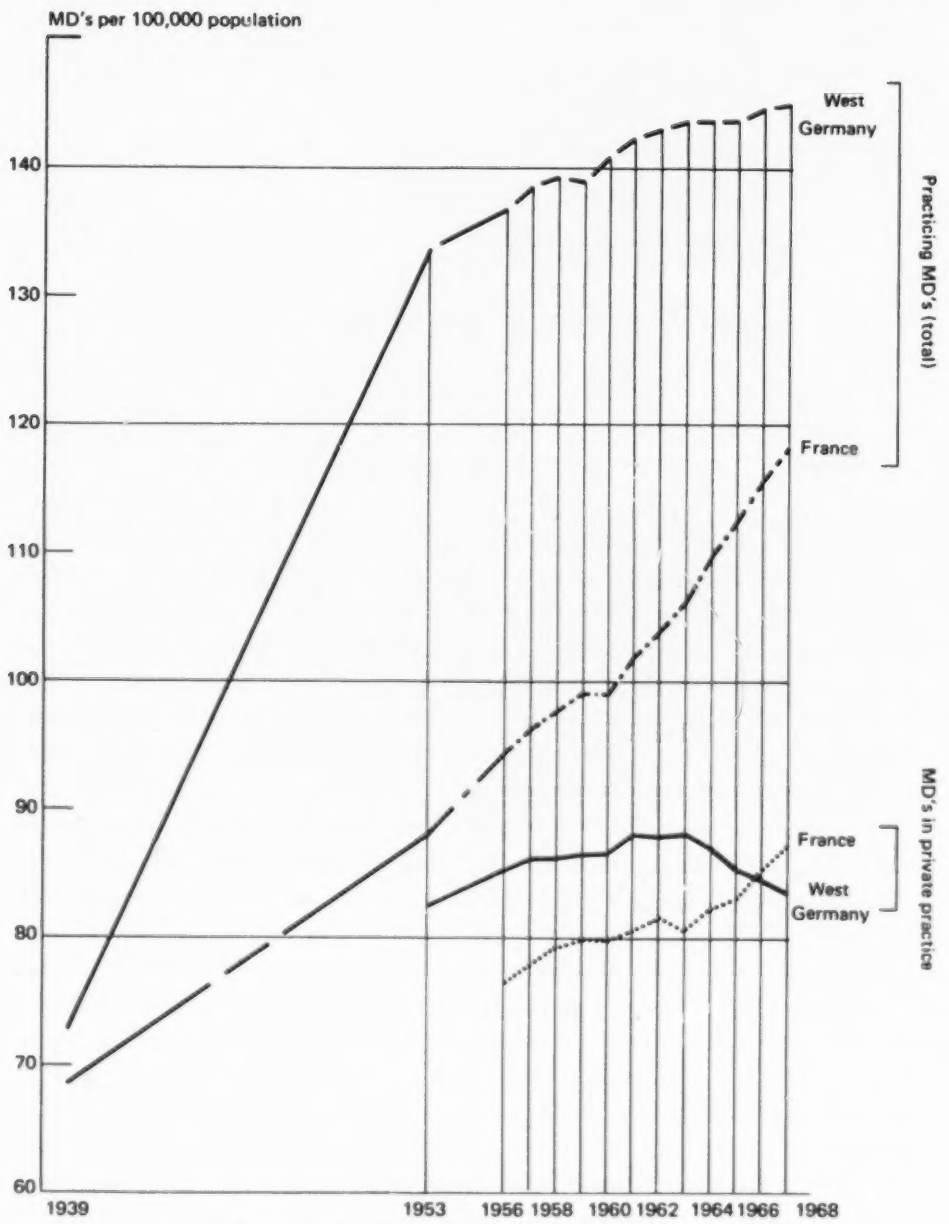

FIGURE 1 Medical densities—France and Germany (Federal Republic), 1939–1968. (Source: Leutner, R., and Bui Dang Ha Doan J. La démographie medicale en Allemagne fédérale et en France. C. Sociol. Demog. Med. 1:49–52, 1969.)

cating general practitioners is not fitted to the picture of the choice of the profession after graduation.

LLOYD: Do you think this means family practice and general practice will become less important or is becoming less important?

PFEIFFER: I think it is becoming less important, yes. I think it is a general trend. Even in our country, it is now being suggested that we have special general practitioners. They would have education for five years before going into general practice, because the average time after graduation before they open their own practice is five years already.

RUHE: I think you have to define also what you mean by the private practice of medicine, and you have to define further what your expectation is from the physician. The fact is that, in this country, physicians are doing many things other than the private practice of medicine these days.

Just to measure the numbers going into private practice is somewhat misleading. We have revised our own consideration of this within the last few years and we now speak of those who are providing health care, which is a little bit different. For example, under our previous count the person who is a full-time faculty member–let's say a full time professor of medicine in a medical center–was counted as not being involved in providing patient care. This is absurd because he spends a great deal of time providing patient care.

Similarly, interns and residents weren't counted among the physicians providing patient care. This is wrong. Some people estimate the resident-in-training today provides more patient care than he will ever again provide in his lifetime even though it is in a hospital setting, usually in a medical center.

The fact remains that he is actively involved in patient care. To get a realistic picture, then, of the segment of the profession which is engaged in delivering health services to the population, I think one has to count more than just the physicians who are in private practice. But even when using this larger figure, you still see that there is a disproportion between the total numbers and those who are actually engaged in delivering patient care.

In this country the ratio of physicians to population, *total* physicians to *total* population, Dr. Laugier, actually has been increasing steadily virtually every year.

The number today, as of the end of 1968, is up to 158 per 100,000, of total physicians to total population. But if you reduce this to physicians who are providing health service directly to patients, the number drops from 158 down to 131, which is a considerable difference.

We are barely maintaining a constant level of physicians providing health services to the population at a time when the demands of the popu-

lation for health services are growing very rapidly. While, in one sense, we never had so many physicians in this country, in another sense we never had such a shortage of people to provide direct health services to the population.

LAUGIER: You are right, Dr. Ruhe. There are two kinds of doctors, MD's and doctors. I call a doctor a man or a woman, but usually a man, who has an MD degree, and who treats patients.

In France, as you have in the States, there is one MD for four doctors. This means that 20 percent of the actual population is not directly involved in direct contact with patients, but there are differences between the sexes. In France there are two women MD's for one woman doctor. A way to answer your question is to say that there should be different medical schools for males and females because their professional destinies are different; their curricula and training must be different, and the separation according to sexes is probably the best thing, I guess. It is the easiest.

RUHE: We have one medical school of our 100 now that is for women only, but that one is going to become coeducational in the not too distant future, so we are doing away with our only medical school that has a separate program for women physicians.

PFEIFFER: I would like to come back to the presentations of Dr. Dumont and Dr. Laugier.

In our country the unrest in the last year was abused mainly by the sociologists and philosophy students. Some of them were going over to Paris for the purpose of creating a new revolution, as you know. This has already been said. They were very strict because of their knowledge of the social problems; they were strong from the beginning in asking for one-third representation in all the important bodies of the university--one-third representation, 33 percent. It is still going on.

Then the Minister for Cultural Affairs decided that each university should create its new order, medicine included. Also, during the night they were meeting together, and then professors left the general conference, and students left, and so forth.

Now, I would like to get some insight. What is the representation in the general conference, Dr. Dumont, in your university regarding professors, assistant professors, assistants, and students?

I would like to divide it into general conference, senate, and faculty. What would you call general conference?

DUMONT: There is no such thing. There is a board of trustees which has been changed. Then there is a senate of the faculty.

PFEIFFER: What is the composition of the senate? How many full professors, assistant professors, assistants, and students? Percentage? Only for your university?

DUMONT: What I shall say applies to the School of Medicine of the University of Brussels.

In the reform committee which was created, there were one-third professors (14), one-third assistants (14), and one-third students (14). Then added to that, a similar number of alumni and four nurses, two kinesthetists, two technicians. Each group had a veto power. This was a reform committee, which was supposed to draft a project of structure of the medical school.

In fact, the work of this committee has been slow, tedious, and at times nearly stopped because of the violent opposition between groups.

PFEIFFER: That means the assistant professors didn't have a separate number of votes.

DUMONT: They voted as professors for their delegation to the reform committee.

PFEIFFER: This was your constitutional body?

DUMONT: Yes, but the result of the work of this body has to be approved by the faculty and the board of trustees of the university.

PFEIFFER: The senate hasn't been made new.

DUMONT: The future senate, as it has been proposed, would include 25 professors, eight *chefs de travaux*, equivalent in your case to assistant professors, eight assistants, ten graduate students, two postgraduate students, eight alumni, three nurses, and one technician. Each delegation to be elected by its constituent body.

PFEIFFER: And the assistants?

DUMONT: Eight.

PFEIFFER: This is not 100 percent.

DUMONT: This is 65. The total number of delegates in the senate is 65.

KREVANS: Let me ask a question. What percentage, Dr. Bosch and Dr. Chiappo, of votes do the students need to have on the decision-making body to have absolute control of the school? What is the figure? You had experience with this.

CHIAPPO: Yes. One minute about that because Latin American countries are the inventors of this new trend. It is a sort of Latin American thing. We started, in 1903 and 1908, a congress of seven countries. Represented were Argentina, Uruguay, Paraguay, Chile, and other countries. The students met together and asked for the first time to participate in the decision-making process. In 1918 in Argentina this was established for the first time formally and in Peru in 1919. Then the students asked for a third of the whole body. In Bolivia they went further and asked for *gobierno paritario*. That means fifty-fifty.

It is very easy to see that the most troubles and the greatest difficulties in the universities are in proportion to how many students they have. For

instance, in Colombia, students didn't have representation until last year. The Colombian University is very good. In Uruguay they have half-and-half representation of the students. As you see in Uruguay, the performance of the university is the lowest in the world. Three percent of the students graduate; this is the lowest performance or output.

In Peru, since 1960, we have had students as a third of the whole body at all levels—in all commissions in the university council, in the assembly, in the admissions committees, in the promotion and selection of professors—a third in the state university and in the national universities.

That produced a new phenomenon in 1960 when this law was established and private universities started to appear. One of the first private universities that appeared was ours, composed by 97 percent of the teachers from the former faculty of medicine in the oldest university, San Marco University, which was founded in 1515.

We quit with 500 students and set up a private institution with participation of the students now in the university council. But this year the government made a new law for universities and established a third of the professors for all the universities including private universities.

For instance, the Catholic University doesn't have students in its Council. They are very different, but by law they must have a third.

PFEIFFER: One-third students, one-third professors?

CHIAPPO: One-third students and two-thirds teachers in different categories.

PFEIFFER: And assistants?

CHIAPPO: Assistants and full professors and associates. The proportion by law is this: In the assembly are the director, vice-director, seven university directors in each field planning economic affairs, student affairs, academic affairs, and so on—all the chiefs of the departments. The new law erased from the map the deans and the faculty system of the French system—the ancient French system.

The students in the new law are only in the body that has the following capabilities: first to elect the director, vice-director; to reform the statutes; and make decisions about the planning of the university and the function of the university.

PFEIFFER: Is that two-thirds and one-third?

KREVANS: They put together the total number of faculty members and they take one-third of that number and add that number of students to the council. I don't think you have to have 55 percent student members to have control because the history in Latin America is that the student vote is a solid vote, whereas the faculty vote never has been a solid vote and the students have control of the universities with as little as 25 to 30 percent of membership.

Dr. Bosch, would you agree?

BOSCH: Yes, I do not have personal experience on this issue, but I believe that has been the reality in our country until 1966.

CHIAPPO: No students?

BOSCH: A council of students.

PFEIFFER: What is in the senate?

CHIAPPO: How many? Twelve full professors, six associate, two representatives of the assistant.

PFEIFFER: Students?

CHIAPPO: The last law said that the assembly is composed of 12 professors and 6 students. That means 18. It is possible and was, as a matter of fact, that with 6 students and 4 professors you have the quorum, and you have the majority of the students but in this law—in the new law in February of this year—it is not possible because the students vote always in the proportion of one-third. Always.

PFEIFFER: In the departments?

CHIAPPO: The departments are composed of professors only.

KREVANS: The point I wanted to get across is that you don't need a majority of the students to have complete control.

RUHE: I would like to ask how many students you have to have to get satisfactory input to the deliberations of a faculty body, in determining policy and curriculum, this sort of thing.

One of the problems perplexing us at the present time is how to get adequate student representation at the national level. Just within the past year, most of the major councils and committees of the American Medical Association have, at the request of the Student American Medical Association, added student members to these committees—not voting members but nonetheless participants.

The problem, I think, or one of the problems, at least, is who represents the students? Do you, Mr. Arregui, in fact represent the students of Peru? Does Mr. Yu represent the students of the United States?

I think it would be awfully difficult for either of you to say, although it might be easier for you, but I would think it would be difficult for anyone or even a half-dozen American students to say that they represent the students, the medical students of the United States.

Within a given school, it seems to me that the question of control, while it may be crucial in schools at which there is confrontation or contest between the students and faculty, it is not a major problem. However, the important question for proper determination of policy and modification of the curriculum is how many students do you need in order to get really proper representation of student thinking on various faculty committees and policy-making bodies?

Could anybody answer that?

KREVANS: I can answer the second part of your question, but I will speak for the students. They are no less representative of the students than the faculty members are representative of the faculty. So I think that cuts in both directions. But my concern has been that the history of student representation has been monolithic.

One-third of the membership on a governing committee, in essence, is complete student control.

NORTH: Given a committee of 18 or 20, what is effective, constructive student representation?

LLOYD: Perhaps I can answer that. Effective, constructive student representation on the committees, we found, consists of one student. It seems mad that one student can claim to represent 13,000, as I have been doing for a year but, in fact, it is effective, very effective, and it is reasonably representative if that one student is prepared to listen to the views of all his students and to survey them properly, which is what we do.

As long as you have surveyed student opinions on the important issues, you require only one spokesman. The only reason students in the past have tended to try to get more than one spokesman is because somehow there is a belief in committees that there is a power in numbers. As long as you can get committees to appreciate the fact that there can be just as much power in one person who surveys the student view, one person is really more effective.

NORTH: In most committees, you usually find that, although you may represent opinion well as one, you like to have two as a check and support for each other. If I had to pick a figure out of my head I would have thought two students would be required for effective representation.

LLOYD: We usually have two on our committees, but they are not really necessary.

DUMONT: In our university, the students were very reluctant to have only one representative, as they were afraid that their representative would become hostage to the faculty. They also thought, and I think rightly so, that in a committee there is a power in numbers and that one of them would be unable to resist the pressure and the prestige of 10 to 15 professors. As you see, they are 13 percent in the senate and the discussion went from 6 percent to 20 percent. Perhaps it will be brought back to 8 percent, but they want more than one.

There has not been any election on a political basis, perhaps because at the senate of the school of medicine delegates were elected by class. Generally classes elect people who are vocal and generally very bright students who want to do something, not to destroy. For the university board of trustees, one student representative was elected by each school, which means that this representative had to collect votes from all the students;

and the delegate was generally somebody who had been engaged in lots of curricular and extracurricular activities and these people were generally not political activists. However, the possibility that political parties may become involved exists and is rather frightening.

ZELTER: I wanted to explain the general organization of the student-professor relationship.

PFEIFFER: Is that valid for all France or Paris?

ZELTER: Nationwide. The general system consists of one local senate for each unit—let's say a discipline, or department, or what is called *unité d'enseignement et de recherche*. I shall describe later how local senates are elected.

Each senate elects from its own membership students and professors to represent it at the regional senate. Faculty senate and every regional senate elects students and professors to the national council for education and research where there are two-thirds professors and students. Among these two-thirds, we find 50 percent professors and one-third representatives of the great national causes and interest, whatever these may be. These are designated by the ministers and the government.

On the basis of the local senate, this is the scheme you would have for medical schools. The number of representatives, professors, scientists, technicians, is less than 100.

PFEIFFER: Is that now the general assembly, the university council, or something?

ZELTER: For a medical school, it is the university council. The number of people elected must be fewer than 100. It has grown in comparison with what has been on the other side, the general scheme of academic careers. Now, the number of teachers and academic people represented must not be less than 50 percent. This is the first point.

The second point is that among these academic staffs, you have to have at least a number of professors and assistant professors elected, and this must be at least equal to the number of student representatives and not less than 60 percent of the teaching staff representatives.

It means that you have not less than 50 percent of teaching staff representatives. Among these teaching staff representatives, you have to elect a number of professors and assistant professors at least equal to the number of student representatives elected elsewhere.

This number not only must be equal to the number of student representatives but not less than 60 percent of the total teaching staff representatives. I am afraid it is awfully complicated.

Now, full-time scientists are not included in this 50 percent, and the number of full-time scientists to be appointed depends on the number of full-time scientists there are in one medical school. For instance, in mine,

there is a total of about 56 representatives. We have 3 full-time scientist representatives. This is a local example. It has no general meaning.

You also get representatives for the technical staff, which for my school, for instance, where there are 56 representatives, is 2. You can have outside personalities, and the number of these outside personalities must be more than one-fifth of the total number of representatives and less than one-third.

PFEIFFER: Of course, it is very clear.

ZELTER: These outside personalities are chosen by the other members of the council—professors, students alike. Let's come to the students now. They are elected: once you have sorted out all these numbers of representatives, you find out the percentage of the number of students to be admitted in the council. The students are elected depending on their year of study. There must not be more than one-fifth of first year students. This is because of that slow process of selection. Otherwise, you would get 50 percent of first year student representatives and the remaining five years would be all packed and constitute the remaining 50 percent. To have the maximum number of student representatives, you have to have more than 60 percent of voting students. If you have less than 60 percent, the student representation is determined by the ratio of the voting students.

PFEIFFER: So it forces students to go to the election.

ZELTER: I tried to explain the other day that it didn't work this time for all sorts of reasons. Now, in fact, the number of students elected from place to place varies. In the research institute for instance, you would have very few students, of course, and in an average medical school, the number of representatives constitute between 25 and 35 percent of the total number of representatives.

LAUGIER: In my medical school there is an academic senate of 53 people of whom 15 are full professors and associate professors and two are in charge of departments in affiliated hospitals outside the main teaching hospital. This makes 17 people of "security" age—17 old men.

There also are 9 assistant professors and instructors, 3 research scientists (employed by the French equivalent of the NIH), 3 representatives of the faculty administration. Finally, there are 21 student representatives, 3 or 4 from each medical class, including the postgraduate classes.

The senate is concerned only with medical curricula. It does not appoint the faculty.

Although this may be an effective system in fields other than medicine, I fear that it is not the ideal solution in our discipline. While it creates the illusion of democracy and permits the circulation of information, it cannot be truly effective as long as the hospital aspects of medical education are not taken into account.

PFEIFFER: What is that? Where are the people between 26 and 32? The clinical residents?

LAUGIER: We are not talking about hospital positions. This is just on the university side. It is the application to the medical school of the new general law concerning all higher education. To illustrate, I vote as a professor, not as a hospital consultant. Mr. Zelter does not vote as an extern; he votes as a student. Almost everybody has two hats, an operating-room cap, and a mortarboard. Only the second votes, and at times there can be a conflict between the opinions of the two.

QUERIDO: I think one of the most important points is the fact that there is student unrest and that this is a social movement that you have to recognize. This, however, does not deny the right to have a reaction to it. And to have to react with views for which you stand. Now, I think all these stories of representatives are nonsense if they are not more analyzed and defined.

The story is—I have seen this happen in Holland—that most of the universities are in difficulties because the top people in universities don't have a clear idea of what they stand for. If you know the aims of the university and therefore what you want to defend, then you can react.

Now, what are the aims of the university? Personally, I think the most simple and the most understandable definition is given by Perkins (James A. Perkins. The University in Transition. Princeton University Press, 1966). He says they are threefold—the acquisition of knowledge, the transmission of knowledge, and the application of knowledge. The unpleasant thing is that the medical faculties are very much concerned with the application of knowledge as they are so involved with health care, because they can't work without it. What Perkins indicated is that if one of those three functions outweighs the others, then the university gets out of balance and is in danger.

The application of knowledge is the requirement of the society. If the society grips the university too much, then the university is not viable. If the university excludes itself from the society, it lacks feedback from reality and does not influence society. If the university is not looking at the acquisition of knowledge but transmits traditional knowledge (as before the Renaissance), it is a sterile institution.

Now if you accept that there are multiple functions in the university, then you have to realize that there are different groups in the university that pursue those multiple functions. Then it is not so that the students of the university are the university. They constitute only a part of the university.

They are on the receiving end. They are offered the possibility to develop themselves. But one has to recognize also the other functions of the

university, which have to be in balance with the teaching. Doing so, one also arrives at the statement from the Byrne report on the Berkeley revolt: "The university is established by a wise society to be its continuing critic."

If you stand for these things—and I would like to know whether you agree—then the student participation can be only in matters of the curriculum. However, through their discussions of the curriculum they indirectly influence the other functions—the acquisition of knowledge and the application of knowledge—because the three functions interact.

As soon as you accept this, in my opinion, participation in the development of the curriculum should be real and on a basis that enables them to express their thoughts because one accepts them as equal partners. So, personally, I think that participation in governing bodies and senates, mathematically calculated, makes little sense. It will not work for many reasons, such as lack of skill in management problems. If for some reason participation in governing bodies must be accepted (for political reasons), it should be observed carefully that the fulfillment of the mentioned three basic functions are guaranteed.

CHIAPPO: I think that this is the function of the university: the university is to educate the man, give instruction or teaching in research, project to the society. These are its functions. In our law, we said we must transform the socioeconomic structure of our country in order to obtain a just society. We perform this function in order to pass judgment about realities and to pronounce with liberty about national problems.

QUERIDO: I am sorry. If you state the aims of the society as a motive for the university, I can assure you that if you have a military country, a fascistic military country, the university will be returned to a fascistic instrument. Don't worry one moment. It is not the function of the university to influence the socioeconomic development of a country.

KREVANS: I think this is one of the fundamental questions that we really have to examine. This is what I have asked Dr. Ellis to solve for us tomorrow, because it has to do really with everything else. It, then, determines really what other moves you make.

I share some of Professor Querido's concerns that it isn't that the university must be unresponsive to society but, as we wrote in that lovely Spanish article, it must select those problems on which it thinks it can make a contribution. It also must retain the kind of independence and aloofness that allows progress and serves society in a unique way. As soon as it becomes nothing but a responsive instrument, then it loses its ability to do the unique things it can do as, in a sense, an intellectual island, and there is some virtue in having a piece of ivory tower somewhere.

PFEIFFER: I would like to return with a certain amount of knowledge about

what is going on in other countries. I think it is nice if you have to go to the United States to learn about what is going on in Europe.

Will you please tell me what is the composition of your university council, your senate, and your faculty and your department? You hear from the French fellows what is in the department. What have the students and assistants to say in the department? When I get that answer, I would like to have it from England and from the United States.

KREVANS: It is easy. In the United States the answer is there is none. In the United States every university is different.

PFEIFFER: What is in your university representation of the assistants, students, assistant professors in the important bodies?

KREVANS: At the present time? Zero.

PFEIFFER: That is interesting.

KREVANS: Our university is run by the departmental chairman.

PFEIFFER: It is the old hierarchial system still prevailing.

KREVANS: Not in the United States, at Johns Hopkins.

PFEIFFER: Thank you Dr. Krevans. What is Holland doing in that respect?

QUERIDO: In Holland the situation is under discussion and is going on in the different universities in different ways. It is confusing where it will go definitely because now management consultants have been asked to investigate the activities and organization of some universities. Some reports discuss professional organization and industrial organization as both being present in the university.

The point is that all universities have a "study council" for the curriculum in which there are generally three students, three staff members, and three senate members who discuss the curriculum, curriculum changes, the way the tests are taken, and so on. The decision is left to the faculty. It is an advisory body with a very positive and very constructive function. We have difficulty knowing whether the students are true representatives. The assumption is made that the students cannot be experts on every subject discussed in this council, and they therefore have the right to bring advisers without voting rights. They also are allowed to bring advisers from outside if they would like to do so.

PFEIFFER: May I just ask only Dr. Querido whether in your senate you have full professors and faculty only—and in the department also full professors.

QUERIDO: Leiden, at the moment, has representation on the faculty already from other sections, not from technical sections, but the staff. Rotterdam has taken full professors and associate professors in its decision-making body.

PFEIFFER: Representatives means one or two? One assistant? Two assistants?

QUERIDO: I do not know the exact figure.

KREVANS: May I make a suggestion? If, this evening, each of you who has the kind of information Dr. Pfeiffer wants would write it out and give it to him tomorrow, delineating what the power structure is in the universities—whether it is a single university or if it is a national thing—then we can save time instead of calling facts back and forth.

ARREGUI: We can't deny the university has a role in society. It does have a role; it serves a purpose.

QUERIDO: I don't deny it. It is the third leg it stands on. It has three legs.

ARREGUI: But the question is, Who is it serving now? It is serving the purposes of a minority because, as I mentioned in my paper yesterday, the research and teaching that is being done in universities are, in a way, conditioning the development that serves the interests of the present structure of our society—of a minority. So you have to change those things. You have to have a representation of not only the ones that are interested in developing those things but the rest of the persons of the country, which can be represented by the interest of some students. The university then has to have a critical position in society—has to criticize.

QUERIDO: That is my point also, but it has to criticize as an independent organization and not as an institution being controlled by society.

ARREGUI: But it is being swallowed by society. That is a fact.

QUERIDO: In what way? I know how you see it, but tell it. This is the argument we have with the sociologists.

ARREGUI: It is a sociological approach perhaps. We are serving the purposes of an imperialistic structure by the kind of research we are doing. The research done at our school is mainly on high-altitude diseases. What has it given to our society? Nothing. Nothing has been accomplished in 30 years of high-altitude investigation, in that sense.

What are we doing in order to solve the problems of health in the slums where we are, where our university is located? Nothing. Are we serving the purpose of a majority or the purposes of a minority?

KREVANS: Alberto, if you say the university can only serve functions of the majority of society, who will serve the functions of the minority?

ARREGUI: It is all a matter of equilibrium.

KREVANS: I frankly find this drive to become well-balanced a little frightening because I will remind you that a well-balanced object doesn't move.

ARREGUI: That is a static point of view, but the real concept is that a well-balanced thing is dynamic; it moves. The world is moving. Things are dynamic in essence. You can find this in the seas and find it in society.

If you are educating a man properly to become aware of the problems

of society, he will become aware and do what he wishes to in terms of government, local government and central government, if necessary.

With respect to student representation, all the universities in our country are autonomous units. And as such, the representation is naturally parochial. I think the most important thing is that senates should be as small as possible, and I don't think proportions and numbers matter one bit. What does matter is individuals and personalities. If you have one man of the right caliber on the senate, he is good enough. This is an awareness which has developed in both student organization and senate organization. More and more, senates are accepting students onto their boards now, and all they are worried about is getting a good student, not fifty.

NORTH: Why did you want business and trade unions representing society in the universities?

ESCOFFIER-LAMBIOTTE: That is the case in France. It is one of the points in the new law in France. It is necessary. It is a good thing.

KREVANS: I think this move is certainly happening in hospitals, where I think we are finally beginning, in a sense, to appoint consumers in positions of responsibility.

MILLS: On the subject of research and where it is going and who it is being applied to eventually, when we talk about community medicine and its role in the university, I hope I don't imply that the university itself should be providing this service to the community. The role it has in community medicine, as I see it, is to provide research into the field and, through pilot projects, to demonstrate to government and other agencies how to go about doing it. This hasn't been done yet. This is what should be done.

YU: Concerning Dr. Ruhe's question on student representation on the American Medical Association, I think you should have at least two students. I believe this would lead to a more balanced and representative viewpoint. Often one student may serve as a check or balance against the other student.

As for the reason for having students on some of these committees, I would like to say with respect to American medical students, faculty, and practitioners that I think students have essentially the same goals as the other groups, but we see things from a different viewpoint with a different background. And our suggestions for mechanisms to achieve these goals might be valuable input.

KREVANS: I would like to hear from some of the students as to what they think the role is that they should have in the university. We have only a few minutes left, and we are on a topic of importance and interest; nevertheless, I still should like to hear from the students what they think the role of students should be in the government of universities. Mr. Lloyd?

LLOYD: Coming from, I suppose, a conservative country, I feel like a tremendous outsider in this respect. Universities in our country see themselves as institutions whose purpose is primarily to educate individuals. "Individual" is a very important word in our country. Balance has nothing to do with the universities in our country, and I don't think it should. Social reform is a function of the government. Political awareness develops naturally in individuals in our universities. It is not something that the universities are primarily involved in developing.

Since we are presently in the medical school, taking the present curriculum, we perhaps feel more strongly about its deficiencies than does somebody who took it twenty years ago.

MILLS: I am undecided about the question of representation. In a large majority of instances, I think one or two representatives are enough.

KREVANS: But you think they should be representative not just on curriculum but in a sense the power structure, the place where the decisions are made about the whole school. This is, I think, what we are getting at.

I don't think any sensible person would argue that students really are the only source of real input of a certain kind of curriculum. It is almost insane not to have them. The question, I think, is—do they have a role to play in the decisions of the university as a university, not on the specific item of curriculum?

MILLS: Yes.

KREVANS: What sort of role would you have them play?

MILLS: At McGill, I don't know what the total senate number is, but there are 8 student representatives elected by the student body, who play a full and active role. Eight out of 60. They vote as a bloc. They were elected as a slate. They have a full role. They are free to take what role they choose.

ARREGUI: The students do not have a role, in that sense, in our university. We are not aiming at deciding how many bottles we have to buy, or things like that. There is an administration that takes care of those things. We are really interested in changing some of the aims of the university—especially, how to accomplish them. It is not in the medical-curriculum committee that those things happen.

BOSCH: I would like to be clear. When we speak about curriculum, are we speaking about educational objectives included in the term's curriculum or just what is taught?

KREVANS: I don't see how you can separate them.

DUMONT: I think it has been said very often in our university and other universities in Europe that you have two positions. You give half a representation of the students in the curriculum committee and no power of decision on other matters. Then you get many fights because the curriculum is very closely linked in medical schools to hospital politics and to

research politics. The faculty will always try to deal with the issues outside the reach of students and therefore consider them as issues concerning mainly hospitals or research. The decision-making power of the curriculum committee becomes rapidly a joke. That is what happened in France. There is a little magic in deciding to put so many students in this council, but all the important matters are outside the prerogative of the council. There is going to be a lot of trouble about such politics. I think you have to face the students and be honest and tell them that they have a minor role in the decision-making of an enterprise as complex as a school of medicine, but not to pretend to give them a big role while in fact cutting their power to nothing.

On the other hand, the role of the students as a minority group in the true executive body of the medical school is important, I think. First, for information. They should be informed, and when they are informed, their actions are more rational and predictable. Second, they have an open mind, so they ask questions. By asking questions, they can bring changes in policy because we very often assume that what we do is good because we have always done it. Sometimes, it is very good to have somebody get up and say, Why do you do it? Even on minor subjects, it is good to hear the question and think about it.

Sometimes you discover that you were wrong all the time. The last point is that the students, as are the alumni and the young assistants, are relatively impartial and honest. They don't play in the power politics that goes on in all universities. They don't play the politics of one department. They have no vested interests. They generally have an open mind, and if you can convince them that some politics is better, they will vote according to their convictions and not as faculties do, according to their selfish or department interests. They will burst wide open the flagrant cases of nepotism, "buddyism," sectarianism, and departmentalism that plague the European universities.

I think the most important thing is to get students and alumni representatives who are not political activists, who are not there to play politics, but who are really interested in the school as such. A suitable mode of election may favor such men.

McGREGOR: I think what I was going to say has already been said better by Dr. Dumont and somewhat by Mr. Lloyd. To put it slightly differently, I think when you act as a legislator, writing constitutions, you want to have two things in mind. When the university is operating under conditions of reasonably good morale and cooperation, what I would consider to be probably the normal state of affairs in most of our North American medical schools at the moment, at this time it doesn't matter at all how many votes are awarded to each section of the community. At such times, I agree

with Mr. Lloyd, all you need is that those who make decisions should hear the opinions of students. For this, you need student representatives on these bodies; not just one, or he may not be heard, but several, and they must be representative of all sectors of the student community.

However, at times of breakdown of morale, you really need to know how the votes are counted. When you enter into a sort of open war–confrontation situation–and only at such times, it is critical to whom you give the votes. At these times, I would want those members of the university community who were identified with and committed to that community in depth to have the power, the predominant vote.

So, I would say that I want students on university councils in quite large numbers–enough to be effectively heard. The actual number does not matter except at breakdown time; and then I don't think I want them to have substantial voting power.

LLOYD: You asked what role they should play. I think one thing that has been impressed upon us recently is that, as students, we must realize what roles we can't play. There are certain things in which we must withhold, stand back, and not say anything at all.

Students have a terrible habit of having something to say about everything that gets them into very deep and muddy water and not really appreciated. There are certain aspects in any university about which we quite obviously are ignorant. We are not competent to judge on the staffing structure within a university normally, because we can't know the needs of particular departments.

In many terms of capital expenditure, there is no reason why a student really should have any knowledge or any information to give on this particular topic. I think the important thing is to have students there who will realize when they must shut up. As long as they have the say on things that are important to them and say it, and as long as they are then listened to, as far as I am concerned, I am satisfied.

MILLS: Dr. Dumont asked for a student, unbiased politically, down the line, and very open minded. You don't get this type of person interested in positions like this. The type of person interested in working with something like this is by his nature politically active and biased.

DUMONT: It depends on the way you elect them, and also on what you call politically active. If you mean by that, that these students are strongly opinionated and vocal, what you say is true. But if you mean belonging to a political party and planning a political career, generally no. If you elect your student representative by class, you will see that you don't get the political activist. You will get generally the best and more mature students in your class.

If you make an election on a body of 5,000 students, you will get somebody elected by politics. I think that the crux of the matter may be in part the way you elect your representatives.

I didn't say that the new senate of the school will elect an executive committee which is composed of full professors and will, in fact, be the government of the school. The new senate will have to discuss the general politics and the general budget; they will not discuss the budget of this department and that department.

KREVANS: That is not true here. No matter how you elect them, you get the politically active students.

MILLS: They also happen to be bright students, too.

YU: I think you almost have to have a politically oriented person if he is to do the job well.

LLOYD: You can't talk about medicine without talking about politics in our country. When you have a national health service, medicine is politics, and you have a political animal if you have someone prepared to talk about the national health service.

KREVANS: Mr. Zelter, you have been reticent to speak up on this issue.

ZELTER: I honestly don't know. I would like to know first what is called a university decision. It may mean very different things, indeed.

KREVANS: It means very different things, indeed, but what I am asking is, What role do you think students should play in these different decisions that the university makes other than the straightforward curriculum? The university must have stated, for example, whether or not to go into a community medicine program, or whether or not to build a nuclear reactor, or whether or not to take a defense contract to make poison gas—little things like that.

ZELTER: I think definitely that students have a role to play in such decisions. I don't think they have to be developed in the technical matters related to these decisions from the principles that are under discussion. I think they definitely have a very important role to play. Just because first of all, on a purely technical basis, they certainly will be the users in the years to come of these very things you are trying to build inside the universities, and they certainly are some sort of independent body that has not only the right but the necessity to express this opinion as such; I think this is something very different.

KREVANS: Because university decisions are very broad and unpredictable, the questions that come up this year, Dr. McGregor, at McGill, you would never have guessed last year would come up.

McGREGOR: I think the distinction that we are drawing now between student and faculty is largely artificial. The number of divisions of interest

is infinite in our own communities. Similar distinctions exist between full-time and part-time staff or between basic and clinical. You choose it. To concentrate on the difference between students and the rest of the faculty is not realistic at all. I agree that in the past we have tended to overlook this particular segment of our community, and I agree that we should not do this in the future. But to give them a disproportionate voting power compared to all other interest groups would be nonsense.

ZELTER: I don't mean at all that this should be student versus the university or versus the faculty, and faculty versus the whole authorities, and so on. What I meant when I said that the students had a right to express their opinion, or should do it in any case, I meant it as students being a part of the university.

I think that all the trouble that came up in our university actually came from the fact that we have been doing everything to divide all the different parts of the university into individual bodies fighting each other and I simply think that it is one of the keys to today's problems. Sure, you are not going to have a university that has an attitude of its own and where general agreement involving all the different parts of the university has been reached, then I think you are not going to have a consistent university policy and a truly independent university.

KREVANS: I think that unless somebody has a solution to offer to all these problems, we should continue. Dr. Dumont, do you have suggested solutions?

DUMONT: No, I have no solution, but I would like to point out that there is a representation which is very important in the decision-making body of the medical school—the alumni or let's say representatives of the medical community in the area. They are even more necessary than the representatives of the students.

PFEIFFER: I think one aspect has not slipped into the discussion this afternoon. We are always talking about students because the whole meeting is devoted to student unrest, and I can tell you, since the experience has arisen, that there is the same unrest between the assistants. I think we have to include them in the discussion, maybe not at this meeting. We can perhaps devote another meeting to such problems on some remote island like Tahiti or somewhere to discuss that problem, but when you ask the assistants whether they want to be represented in the power-controlling, institutional bodies of the universities and to what percentage, they ask for a high percentage. I think everybody who talks to them is going to experience it, and they don't want to be in a body without voting power. That is a clear-cut experience. Ask your assistant, and you will get the answer.

KREVANS: They are speaking up. We don't have to ask.

CHIAPPO: Just two words. This morning we were discussing the reasons for the student unrest, and we have discussed the matter of participation of the students. We have discussed the matter of one-third and half-and-half, and this morning we heard that demography is the reason. But maybe we failed to ask which is the historical and spiritual meaning of all things that are running now in our societies. And I think that the university is only devoted to research and to teaching and so on.

The students need to study more. I think that what is happening is that the students are leaving in the process, and the deep change in the universities reflects the change in society—the interest of other people who are already fixed in their interests—different interests. But the students are dreaming about a different kind of values, and I think that the university must distinguish between its functions. And this is the reason for the student unrest.

We have problems in the less-developed universities; you have unrest in the very well-developed universities; I think that something like what happened in Paris is happening now in Cambridge. Harvard is a good university; this is an affluent society, but it is not a matter of 50 percent or 30 percent. Something has happened. And I think that what has happened is that the university must play a new role in society. The university is not a reflection of society, but must play a role in the design of the future of society.

KREVANS: I really want to free our colleagues up here. We are going to be taking this subject up in a major way, I hope, tomorrow, and Dr. Ellis will probably solve it all in a few brief paragraphs for us. I hope we will also have time tomorrow to indulge ourselves in a few more hard definitions of words we have been throwing around. We made some progress, I think, when we looked at community medicine in a litte more detail. A lot of words have been used, and the one that disturbs me most is the word "relevance." I should like to discuss that tomorrow and I should also like very much to hear what a curriculum is.

SUMMARY SESSION

Peter G. Condliffe, presiding

This morning, I think we want to pick up where we left off yesterday. Under the prodding of Professor Querido, we were considering what universities are all about and what medical schools are all about in that context.

I should like to start out the morning by asking Professor Ellis of London if he would address himself to this point and carry the discussion a little further. Then we shall go on to some other people, Dr. Bosch and Mr. Lloyd, who will help us summarize and draw some kind of conclusions out of this meeting.

John Ellis

REFORM OF MEDICAL EDUCATION– DEMANDS AND RESPONSES

I take as my point of departure that of the colloquium itself–the pressures, particularly from students, for reform of the medical schools, understanding that my brief is to suggest how these pressures could lead to reform of medical education and, in particular, to suggest to what extent and in what way the university and its medical faculty should implement that reform.

After listening to the discussions of student unrest–and I am sorry I wasn't here on the first day, but I think Geoffrey Lloyd has filled me in in complete detail on what was said–I will add my own experiences of student unrest. I think we could agree it consists of dissatisfaction with three different but related things: dissatisfaction with the state of society in general, dissatisfaction with the state of medical care, and dissatisfaction with the state of medical education.

Now, I suppose the students of every country have certain features in common. They possess (to a greater or less degree, according to their country) better facilities for learning, and they have more to learn than their predecessors ever did in any university at any time. I suppose one could say that what they learn–their whole university experiences–will mean more to them than the same meant to their predecessors, and it will set them further apart from their own contemporaries in development and opportunity than their predecessors were set apart from their contemporaries by their university experiences. So you could say all the students of today are more privileged than any students have ever been before.

I would think that, paradoxically, all students of today are nonetheless deprived to an extent far greater than any of their predecessors have ever been. None of them has grown up in a firm society with a structure—it doesn't matter whether it is a good or bad structure—that is accepted by one dominant segment of the community. None has grown up in that kind of context. They have all grown up while everything around them was subject to change—and pretty rapid change—and to criticism and doubt. Even in a developed, placid country without a war going on, like the United Kingdom, there isn't a student who has grown up having around him the visible structure of a society that is recognizable as stable. Most of them, living in suburbs, have never had the opportunity to see a man at work, let alone a postman, a baker, a milkman, a doctor, a clergyman, all going about their business, accepting that this is their business, this is their place in society, this is their acceptable function.

Instead, in such a country, young people have grown up with times changing around them, no fixed guidelines accepted by any, least of all by their parents, a society which is changing not only fast, but from below, in contrast, I would have thought, to the society in almost every other era, which has usually changed slowly from above down, with conditions, terms, phrases, dress, fashions, slowly moving down from a limited number of people at the top to the larger number of people at the bottom. In recent years the change has not only been rapid, but it has come rapidly from the bottom to the top.

So every student has grown up accustomed to the idea of change, rightly critical of all dicta and dogma, totally unconcerned with convention with which my generation in medical schools in Britain was hagridden. We didn't have much in the way of rules, but we were very, very careful not to do anything that wasn't considered the thing to do, whereas about the only convention with which present-day medical students are concerned is the convention of not being conventional, even if it means wearing an unconventional dress which is exactly similar to the unconventional dress worn by every other similar person.

I would think that all students have grown up quite rightly believing, from all the evidence before them, that their elders and betters don't know all the answers, and they are unable to

accept those answers except when the elders and betters ask the questions in examinations. Under those circumstances it is, of course, politic to accept the answers of the elders and betters, but under no other circumstances at all.

So I argue that all students have this paradox of being unduly privileged on the one hand and deprived on the other. I would think this an uncomfortable combination at the time when the world's social revolution leads them to have a highly developed social conscience, because the gap between the unfortunate and the fortunate has increased as the advances of modern times have added more to the fortunate and, on the whole, less to the unfortunate.

On top of that, of course, social injustice is more obvious than it has ever been before because of increased transportation, improvement in communication, and so on. So there is in evidence a situation of heightened social conscience, at a time when there is no obvious social system in existence that minimizes the increasing gap between the have's and the have-not's.

Societies in which I would think the community, for the community's overall good, has severely limited the freedom of the individual, don't seem to survive beyond the time when there is a total dedication to an ideal. They can survive the first five-year plan, perhaps the second five-year plan, but they begin to wilt in the third five-year plan unless perhaps something happens which threatens the existence of the entire country. On the other hand, societies that are based upon concern for the individual equally obviously are crumbling unless the individuals are capable of developing equal respect for the rights of the community, which, at the level of my generation, most of those societies don't seem to be capable of doing.

So with no satisfactory structure for society, the gap between the well-off and the less-well-off widens rapidly, and concern for the underprivileged grows, along with the desire to find a structure of society that will minimize it. And all that, students have in common.

But thereafter, the degree of their unrest must differ, I think, according to the degree of unsatisfactoriness of society, of medical care, and of medical education in their own particular country.

Dissatisfaction with society is greatest, I think, in countries

where the largest number of people are underprivileged, and it is less in countries where the lowest standard of living is not too bad. Dissatisfaction with medical care is greatest in countries where the largest number of people are deprived of medical care, and it is less in countries where the lowest standard of medical care is not too bad. Dissatisfaction with medical education is greatest in countries where the majority of medical students receive inadequate preparation for giving to the people what medicine has to offer, and it is less in countries where the weakest medical school and postgraduate training can prepare most individuals moderately well for the delivery of medical care today.

And at that point, I would like to go off at a slight tangent to talk of student unrest in the United Kingdom, of which there is very little, perhaps significantly little. What there is occurs mainly in faculties of economics and sociology, is rather unreal, is mostly focused on the problems of other countries, and, as Geoffrey Lloyd pointed out yesterday, is heavily dependent on the attention of the press.

There is virtually no unrest—except at a certain level which I will describe in a moment—among British medical students, and I would imagine this was the message, in a sense, that Geoffrey Lloyd himself gave. This is not because our medical students are too busy, too occupied with their medical studies. We know perfectly well from studies of all the students in the country that there are long periods of time, particularly in the last three years of the five-year course, in which they are largely unoccupied and frankly bored.

It is not because our medical students are financially secure. The majority of them are not, although they are paid and are paid fairly well. It is not that they are either too young or too old. They are, it so happens, the youngest entering group of any faculty in British universities. They are entering over one year younger than they did ten years ago, but they are leaving the university older than any other student. It is not that they are too narrowly educated. It is not that they have been brought up purely in physics, chemistry, and biology. Quite to our surprise, we have discovered that nearly half the entering British medical students have passed examinations with marks similar to those on exami-

nations they have passed in science, in at least one nonscientific subject, or in mathematics.

It may be, of course, that our medical students differ from the rest of the students in Britain in that they are more pragmatic, that they are more concerned with the care of individuals and not so interested in the care of the mass of people. There is a possibility there. Certainly, they are not grossly dissatisfied with the standard of medical care. I think they are, and rightly, dissatisfied with the standard of medical care in Britain at the top, at its best, where it suffers from inadequate facilities. It must be one of the few countries still retaining a large number of hospitals built up to 200 years ago. The general practice facilities are, frankly, shameful, so that British medical students are dissatisfied with the level of medical care that Britain offers at its best. But they travel, and they are intelligent, and they are informed, and they know very well that British medical care at its worst, the least that we offer to any British person, is not too bad compared with that in most other countries. And it is, after all, the standard of care that is offered to the least of a nation that measures the present standard of medical care.

The state of medical education in Britain is far from ideal, but British medical students have entered some 15 years after the attempts at reform at the level of organization were begun and have begun to pay off. The reform was carried out quite coldbloodedly at what seemed the most appropriate speed and in the most appropriate way–not reform carried out in terms of, "We ought to do X, Y, or Zed," but totally in terms of discovering from students what was happening and illustrating this, showing that what was there was not good and must be improved, producing an attitude totally desirous of change from top to bottom, an attitude which, when the tide of change was fully set, was so strong that it was necessary to apply a brake lest change occur too quickly.

After all, one of the problems of change in education is the speed at which you conduct it. If you conduct it too fast, the result is worse than if you don't make change at all. This is why in Britain we use the weapon we possess for delaying activities until it is quite certain in what direction activity should move.

We call this a Royal Commission, and on the whole it works rather well.

So now there are faults in British medical education, particularly at the level of method and of the definition of objectives, but not too much at the level of organization. The authoritarian teaching that dominated British medical education is now, generally speaking, as unpopular with the majority of teachers as it is with the majority of students.

So you could argue that British medical students have not very much need for revolt in terms of education or in terms of medical care. They have had, of course, the same physiological need for riot that all medical students in this era have had. But our medical education for over a hundred years has allowed for continual riot. If you don't believe this, I would invite you to come at any time to an interhospital Rugby football match and you will understand why old ladies in England say, "Where do these fierce medical students go to and where do the nice, gentle doctors come from?" This has always been one of the mysteries, that medical students are by tradition crude and vigorous and constantly, in a sense, rioting. So if you come to Britain to visit, please don't say you are a medical student, because the premium on any car you hire will be three times as much as for anybody else.

I don't think you can argue that this difference of our degree of unrest in medical schools from that of other people is student apathy. It is not. Very recently the University of Birmingham was the center of a major explosion of student unrest and the medical students were heavily criticized by their colleagues for not taking part. They replied by mounting a symposium that lasted several days, to which they invited people from across the country and from every walk of life. And they demonstrated there more creativity, more maturity than I have met with in any group of students in Britain, quite clearly identifying with medicine, with its problems, their city, the university, and the country, demonstrating very clearly a very high level of social conscience, which I would argue is the basis of all student unrest at the moment. It is a kind of inborn change of attitude, which in our students leads to a consciousness that the needs of the individual must at times be measured against the needs of society as a whole. And this, I think, will lead to acceptance of the social responsibilities of the

doctor. This is what will get us over this immense difficulty: that in the past it has been enough for the care of the individual patient to be the yardstick by which everything in medicine was measured, but in the future this will not be enough.

There is a conflict between the care of the individual and the care of the community as a whole. This is the most worrisome conflict in medicine, and the first thing that has to be done about it is a change of attitude, and this has been born into this generation of students. They will lead their teachers to teach that the social functions of the doctor—management of medicine, for example—are as proper to fulfill as the care of the individual patient, just as their predecessors some 50 years ago got born somehow with a determination that the care of the individual patient should be holistic—should not be solely concerned with organic disease. There is no other way in which you can explain the fact that when I was a student just before the war, there was no psychiatry taught, and the method of care of patients was in every way a positive antagonism to the concept of the holistic approach to a patient. And yet all this has changed without its being affected by teaching in medical schools. It has been a change of attitude which has led to a change of teaching. I think the major consequence in Britain of the heightened social conscience of the student of today will be a difference in attitude toward the social responsibilities of the doctor, with consequent changes in teaching brought about in the same way. There will also be, of course, a heightened concern for educational method and educational efficiency. And I think both these things have come out in Geoffrey Lloyd's paper. Interestingly, one finds him defining community medicine quite differently from the way it is being defined by most other people, I think, in this room.

I didn't give you this picture of British medical-student unrest as an example of British complacency, but only as an example that the degree of unrest and the focus of unrest must vary from country to country. Everywhere it is important, but everywhere, surely, it is no more than a symptom, a symptom of problems in society in medical care, in medical education. It must, of course, be treated as a symptom, but more importantly the problems that give rise to it must be treated.

I would like to give my personal view that much of what we

listened to yesterday was a description of symptomatic therapy. This long discussion of senates, of academic councils being representative of eight assistants and 24 something else—this is symptomatic therapy—as valuable in dealing with the basic problems as aspirin is to a person with a rise of intracranial pressure, and as dangerous because it is quite fun to do it. It is fun to decide how many of what group shall represent that group. Of course, when you have done all that, you have to reduce that whole wide spectrum to a small enough number of people to be able to make any decision and take any action at all. But it is fun. It is a form of escapism. One can escape from the problems of driving while arguing as to what direction to go and how many people shall get in the car. But it shouldn't really take up too much time. So if we could go to the problems and consider the role of the university in relation to each, let's start with the problems of society.

I would argue that the university can and should contribute to the solution of the problems of society as a whole. I think it can, better than any other organization, contribute information in many areas in which only informed decisions can be taken. These areas are pretty obvious and they denote the faculties that can contribute—particularly, sociology, philosophy, management, and medicine itself.

Perhaps one example of the most profitable combination of university faculties in trying to deal with the problems of society is to be found in Onomodc in Czechoslovakia, where, from the time of the first Russian takeover, it was thought necessary to introduce the recalcitrant doctors of the medical faculty to the importance of Marxism. This led to enforced cooperation between the faculties of philosophy and medicine, which blossomed (once they had digested the digestible parts of Marxism) into a most profitable mixture between these two faculties that has continued to this day.

So the university can contribute information; it can contribute ideas. It could, of course, contribute decisions. There is no particular reason why the university shouldn't decide on the reform of society in any particular country. But the trouble is, I think, it can only do so under one or the other of two condi-

tions. Either it takes authority without responsibility; it says, "We, the university, have decided the country shall do this, that, or the other. This will be the way society will be arranged but it will be the government's job to put our ideas into action." I don't believe, myself, that authority without responsibility is a very bright idea. Usually it results in chaos. I don't think any good has ever come to anyone from demanding authority without, at the same time, taking responsibility.

But the other alternative, of taking authority and responsibility, means that the university takes over government. I am quite prepared to admit that there are many countries—and I think mine is one—in which the average university could make a better job of government than the existing government or any that we have had for a very long time or are likely to have for sometime in the future. The trouble is, the price that has to be paid for this is so high, because it must inevitably mean, really, the death of the university.

The fact is fairly obvious, I suppose, that if you take over government as a university, then your continuation as a university, like continuation as a government, must depend either on being elected next time or upon maintaining your position by a show of force. Of course, the university has a variety of forces it can use other than those of armed forces. The fact remains that you remain in business as a government only either by election or by enforcement. And if you do that, of course, then you forget the freedom of the university—which you do in any case—because every decision the university takes as a form of government is a decision based on the expediency of the time. And that loses what is really the academic freedom of the university, freedom to think free.

There is a concept of a free university that long outdates the new concept of a free university, which seems to be free solely to talk about everything. Free of every responsibility except those put forward yesterday by Professor Querido, in quotation "To forward knowledge, to apply knowledge"—which is not always agreed with but I think increasingly so—and "to transmit knowledge." And I would add one other, the responsibility to develop in each individual student his maximum individual poten-

tial. The last I would define as the academic freedom of the student. And that freedom gets lost, too, if the university takes over the job of government.

I think universities on the whole are immensely useful in the function for which they were created. They can't easily be adapted to fulfill other functions and, when they are so adapted, they can't continue to serve their old functions.

I thought when Professor Querido spoke yesterday, one wasn't listening to the voice of somebody repeating the old traditional feelings of the academic to which academics are dedicated. I thought we were listening to somebody who had been purified by the fires of practical experience, of starting a new medical school in a country where a university meant something, but where all these other problems existed, too—the voice of practical experience, telling that the academic freedom of a university had not only something that was pleasant about it but something that was of tremendous pragmatic importance and must be maintained.

Now, what are the problems of medical care? First, obviously they are interwoven with those of medical education, and they are affected not only by pressures consequent on the social revolution, but also by pressures arising from the coincidental revolution in medicine itself. They contain some hard and rather unpalatable facts, to one of which I have already referred, namely, that the standard of medical care in any country (in our time as opposed to the past) is measured by the standard given to the least fortunate people in that country and not by the standard offered to the most fortunate. I think it has taken student unrest to bring that unpalatable fact home in various countries.

There are certain other changes that underlie that, one of which is very noticeable in my own country—the change from public pressure demanding privacy in medicine to a demand for safety. You can imagine that a country such as Britain, with its little fences and hedges around every house, has a cultural attitude quite different, for example, from the French. You have only to go look at public lavatories in the two countries to realize this. In a country such as France where a public lavatory can be attractively used as an advertisement area, the attitude to privacy

will be different from Britain, where a public lavatory is secreted somewhere behind specially grown hedges and denoted by a little notice, usually not even saying "toilet" or "lavatory" but "public convenience," and put carefully where nobody can see it.

Under such circumstances, it is very natural that one of our demands in medical care was for more privacy. One can see in Britain now, as medicine has changed, a change in public demand from being treated in one's own home, to being treated where it is safe to be treated; a flight from the personal doctor out in the periphery of the hospital, and beyond that to the hospital which is thought to be the safest, usually the one with the largest number of young students capable of racing to the bedside to start the heart again should it stop.

So those are some of the pressures on medical care. But there is also the problem of medical knowledge itself, and the problems arising from that. These lead to demand for a team basis for medicine and this demand cannot be denied.

I would have thought too that the continuing growth of medical knowledge and its safe application both demand a scientific attitude of mind on the part of the doctor. I don't mean by that a lot of knowledge of science, of scientific data, but the ability to think critically, to think with integrity, to be precise, to manage medicine efficiently and safely with, incidentally, probably an increased opportunity and demand for compassion rather than a lessening of it.

That demand for a scientific attitude of mind on the part of the doctor must surely run in parallel with the increasing limitation of the license allowed to all those in medicine who cannot acquire a scientific attitude of mind. So, in consequence, it is a hard but unpalatable fact that the basic common unit of medical care has become a specialist, and a specialist who has acquired a scientific attitude of mind. The generalist is more difficult to produce, slower to produce, than the specialist, unless of course he is a superficial generalist, which is not difficult to produce at all.

I would not agree that the feldsher has ever been a second-grade doctor. I take issue with that. He was invented in Czarist times in the same way that a sick-berth attendant in the Royal Navy in Britain was created, not in the same way as the assistant doctor

in India or Africa. He was, and is, a separate person in the whole field of medical care, just as the nurse or social worker is different from the doctor.

I think it is very hard for our generation, my generation, to face this fact that the generalist is now difficult to produce, cannot be produced in quality in large numbers, and cannot any longer be the basic common unit of medical care, the most friendly personal purveyor of medical care, the cheapest to produce and use. It is hard because we have a devotion to that generalist which stems from many different facts, one of which, of course, is that he has existed only for a relatively short time. Until 150 years ago there was no such generalist in medicine, so he represented in fact what seemed to be a great advance. It is sad to see him disappearing again and medicine again breaking up into the specialities into which it existed before that generalist, that general practitioner, was ever created.

Of course it is true also that the general practitioner was the educational lowest common denominator, the easiest person and the cheapest person to produce. And he was used to bring comfort, and he existed at the time when outside of surgery there was practically nothing else to bring. And he goes on in some countries as the person who is the purveyor of little more than comfort, and comfort is very nice to have.

Of course, as a general practitioner, he never has existed at all in some countries, which tends to leave them with the feeling that it would be an advance if they had him, particularly as it is an advance that would bring comfort, which everyone likes. He has never, of course, existed in any country in sufficient numbers for every citizen of the country to have access to one. I think this, too, is something we tend to forget.

So he really is someone previously available to some of the people in some of the countries, and all who would like to see a higher standard of living would now like to see him available to everyone. But we have to recollect that he must henceforward be additional to the specialists of medicine. He cannot replace them. In the countries where he now exists, you can see this so clearly. In Britain, he exists as a comforter, a kind of separate medical service. He is one of the few people giving service who delivers to the door. And this is nice to have. When the milkman can't

afford to do it any more, or the baker, it is nice to have one's personal medical attendant popping in to comfort and introduce one to the other medical service, which makes positive interference in the course of disease.

I think we have to face it in Britain that the general practitioner, as we now know him and have known him, is a luxury that we are not affluent enough to afford in the future, at any rate, not for a very long time, and his role as a comforter will fall to the medical social worker. His role in initial diagnosis and rule-of-thumb therapy will fall, and is beginning to fall, to the nurse. I don't think we can invent a feldsher. I think the nursing service will take that role over. His role of emergency doctor has already fallen to the hospital emergency services. His role as a generalist will remain, but to fulfill it, he will be fewer in numbers, take longer perhaps to produce than any other member of the medical profession, and function from premises containing facilities that he can adequately use.

In contrast, in developing countries, the need of the rule-of-thumb therapist as opposed to the comforter is a priority, and the nurse and the aide have got to take priority over the general-duty doctor. The doctors that are produced will inevitably have to be specialists.

I once had the task of working out how many doctors Ethiopia could produce in a given period of time, and of trying to decide what they could be used for. When one made a list of the priorities in medicine that Ethiopia needed, beginning with such things as a pathologist, we worked it out that, at the maximum rate of production, it would be 20 to 25 years before one could be spared to become a general practitioner to even 10,000 people, if one could be a personal attendant to 10,000 people. And in Ethiopia one wouldn't have to guess for long as to which 10,000 people would have this particular luxury.

All that is relatively unpalatable, but surely true. There is no country in the world, I think, that exhibits a peripherally based service for delivery of medical care. Some are trying to maintain one they previously had, but none are succeeding. Everyone sees the same picture of concentration of medical resources; fewer but much larger hospitals, the doctors outside hospitals coalescing, grouping together, basing themselves on purpose-built premises.

This trend, which is going on despite everybody's wishes—it is not in consequence of any doctrinaire view of what the pattern of medical care should be—must surely be consequent on some pressure, some pressure we haven't talked about in this meeting, more inexorable than any other. I would argue that it is the increasing gap between supply and demand in medical care, the demand growing all the time more rapidly than any of us can increase the resources with which to meet it in our countries.

So everywhere there is concentration and everywhere there is one other pressure, again scarcely mentioned in this meeting, the reluctance of those who enter medicine to become on graduation superficial generalists. This pressure surely is one of the things that the young demonstrate more clearly than any other.

India, rising from 18 to 90 medical schools, is losing a majority of the graduates moving elsewhere, under conditions of greater personal discomfort to themselves, to find the postgraduate training to fit them further for a special branch of medicine with which India, in its production of 90 undergraduate schools, has failed to provide them. Every country that fails to provide a commensurate amount of postgraduate training loses its graduates to those countries where postgraduate training is available.

So, however much we may wish that there were general-duty doctors working in rural areas, we may as well face the fact that the only way to get them is either by bribery, corruption, or shooting them if they don't go, which is not a very satisfactory way of making them happy, contented general-duty doctors.

Of course, one might argue—and I think Geoffrey Lloyd suggested this—that perhaps we are taking the wrong people into medicine. Perhaps we should choose people who do want to be superficial generalists. But I think one has to bear in mind that, whatever our powers of selecting one person from another, we can only select from among those who choose medicine as a profession. And still the vast majority of these wish to improve the lot of individual people by doing things to them.

I think there is a change going on. The days when the majority of recruits to medicine wanted to make people better with their hands (in terms of surgery) are passing, and an increasing number would prefer to use at least physicochemical rather than purely physical means to improve the loss of the individual. And there is

a growing stream of people (at least in Britain) who would wish to use only psychological means, and there is a growing stream of people who enter medicine because they really want to provide welfare services. During the course of medical studies, they discover this and leave, and they either go into psychology and find this a more rigorous discipline than medicine, or they have the sense to go into medical-social work where they are really happy and effective doing what they wish to do.

I think we have to face the establishment of a specialist-based, team-based pattern of medical care, rationalized into a service. This, in a sense, is community medicine as we define it in Britain; nondomiciliary medicine, not doctoring going on in homes and gardens as though this were some different kind of medicine from that practiced in hospitals (as though you could percuss the chest differently in a double bed than in a hospital ward) but community medicine in the sense of defining the medical needs of the community, deploying the resources of the community to meet them, and measuring the result and doing all this on a continuing basis. That, I would have thought, was the highest priority in medical care. Or, put another way, the organization of medical care itself, its pattern of delivery, is of vital importance and must be under medical control, which means, of course, that management is one of the social functions of the doctor and must be part of medical education.

One error we seem sometimes to fall into is the misconception that organization of medical care is achieved by medical insurance. Who pays, and how much, has very little to do with the organization of medical services, it seems to me. And they must be medical *services.*

To these the university can contribute by study of medical care, research into medical care, interpretation of medical care. And it must contribute also because medical education needs hospitals and health centers, and they must fit into the national pattern of hospital care. Universities must serve a defined community. If they don't, they cannot study medical care, experiment with it, evaluate it, or teach it. So they must engage in it, and being engaged in it, their engagement must be rationalized with the remainder of the medical services.

So I argue we don't have much choice, really, about the right

pattern of medical care. And if one looks, one finds that in some countries it evolves. The choice is between assisting this evolution or resisting it, with the penalty that some may prefer, of having revolution instead of evolution.

Likewise, I think the pattern of medical education is forced on us. We could insist on saying that medical schools produce doctors, but all the facts are against this. They don't produce doctors. They produce graduates who thereafter become trained to become a particular type of doctor, a generalist or a specialist. We have really no choice but to stage the preparation for those who are going to be doctors (as opposed to superficial generalists of some kind or another).

In Britain, we have accepted that fact and the report of our Royal Commission now before Parliament accepts the need, in accordance with existing trends, to have a two-stage preparation for medicine. Everyone will have postgraduate vocational training, including those who enter general practice. The registration, which follows the undergraduate course, will be followed by postgraduate training, which will be followed by a second special registration, as a GP (a generalist), as an ear-nose-and-throat surgeon, as an administrator, as a cardiologist, a psychiatrist, or what you wish.

In consequence, everyone will be able to have a university course that has two aims: first, to prepare a man for a changing future (and incidentally, to enable him to profit from and want to profit from his continuing education) and second, to prepare him to profit from his postgraduate vocational training. The content of that course, in our view, must be permissive, must vary from one student to another, but part of the content must be compulsory. So we would divide our course into three parts: (1) a compulsory content, which is relevant later to future practice; (2) an area of content in which a choice can be made between limited alternatives (you might do more anatomy, I might do more biochemistry; that would not be relevant to future practice but to education), and (3) options totaling at least one-fifth of the total span of five years.

So in general, the content would not solely be relevant, as in the past, to the future practice of the doctor, but relevant also to the present education of a person who is later going to be trained as a doctor.

We in Britain would place reliance on one particular educational method, purely because in our experience it has so far been shown to be the only method that inculcates in a person scientific method of thought—the study in depth of a subject of the student's own choosing, working at problems in that subject may be right at the frontiers of knowledge, and working in contact with a person who is not an instructor but a guide, an encourager, and who is also engaged in studying that same subject.

In other words, we feel that our main educational weapon must be wielded by doctors who are themselves engaged in research, which, more than anything else, leads me to feel that there is no clash between the increase of research in a university medical school and proper teaching. There is, in fact, everything to be lost educationally by a shortage of research workers.

Vocational training, at the other end of the preparation, is a different matter. This is training by apprenticeship and assistantship in the course of practicing medicine, by participation—not terribly expensive, requiring largely nothing more than additional organization.

And to that, too, the university has got to contribute, but in our view, the university cannot be wholly responsible for it. It is not, in our view, the function of the university to fit a man for a job as in vocational training. But there must be a contribution from the university. So what we propose to do about this (and are doing) is to create a new organization at national, regional, and local levels, in which the three component parts of postgraduate training combine—the three parts being the university, the profession, and the government departments of health. Because it is, in our view, essential that in that stage of training of the doctor—the stage that is tailored to fit the special branch of medicine in which he is going to practice—the state must have its say as to how many of each kind it wants and must say it at the beginning of training, not at the end.

The needs of medical care must be married to the needs of medical education. This demands a combination of government, universities, and profession, and if that demand is not met at that stage, then the academic freedom of the university at the earlier stage and the university itself, of course, is inevitably threatened.

That is the reorganization of medical education which, as I see

it, is forced on us. That is the organization of medical care. In both these respects, there are still unsatisfied areas, particularly in educational method and expertise, in which time and study are required, in which one cannot make overnight changes. But surely it is the very fact that what has to be done in care and in education is pretty obvious that makes life so frustrating for the student. Isn't this really the basic cause of unrest, not that nobody knows what to do in medical care and medical education, but that those in authority won't do it? This surely is the reason for student unrest, and thank God there is some.

DISCUSSION

Peter G. Condliffe, presiding

CONDLIFFE: After that extremely able presentation of a difficult problem, perhaps we should limit ourselves to a brief discussion, since we have a tight schedule this morning, and then I will give the floor to Dr. Bosch. Who would like to say something about the points Dr. Ellis has made?

MacLEOD: I should like to ask a question. In a few words, would you tell us about the major reforms that the faculty introduced in British medical education, anticipating student demands by 15 years, I believe you said, which you gave as a major reason why everybody is happy now.

ELLIS: Not happy about educational method or expertise, but happy about organization. There is provision in Britain—not well organized but increasingly well organized—for the second stage of training, with the exception of general practice. And all this effort that has gone on has taken place with student collaboration and help, a joint movement toward delineating the problems and putting the answers into effect.

QUERIDO: It is needless to say that I enjoyed very much Dr. Ellis' statement, and there are two points in it on which I should like to comment.

To this analysis of why the British students are showing so little unrest, I think I'd like to add one thing. Dr. Ellis said, "We have cold-bloodedly made a plan, and we are going slowly on that plan." I think the major point is probably that there is a plan. That is the thing that I have experienced in making a faculty in the midst of student unrest that has practically overthrown the universities. As long as you don't know what you stand for and what you are going to do next, then you are unable to meet the unrest. On the other hand, you discover that even the most rest-

less students are willing to listen to a plan, and are ready to discuss it. They might disagree, but as soon as they feel that they have to work with people who have thought out the variables and the possibilities and who try to explain it to them and to convince them, they are much more willing to go with it than if you are only giving symptomatic treatment.

What I admire of the British is the fact that they have developed plans, whether you agree with them or not. And the greatest tribute I think one can give to the British is the old Goodenough Report, which has terms of reference in 1941, while London was under bombs, that "with regard to the post-war hospital policy, to enquire into the organization of Medical Schools, particularly in regard to facilities for clinical teaching and research, and to make recommendations.*

This is the same story again. They were foreseeing, trying to foresee what was going to happen, and because the foresight was presented, you could actually handle a situation because you knew for what you stood.

So I would say—and this meeting is probably only a beginning—that if you want to handle problems such as those being discussed in this meeting, you must not be overwhelmed by them, but you must know where you want to go if you want to obtain convincing arguments on both sides.

In his last sentence, Dr. Ellis stated that as long as you use the scientific method of trying to find out where medical education should go and where medical care should go, then you have little choice. But the unrest comes because the government doesn't follow your recommendations.

In Holland, parliament has no problems when it comes to enormous water works proposed for reclaiming land or for protecting the country. This is so because any paper they will open will contain so much mathematics that they recognize they just can't handle the problem, and they have to trust the people who analyzed the problem. As soon as it comes to medical education, most members of parliament think in terms of their general practitioner and their own care; for that reason, they also can judge and talk about national medical care. In short, it is not recognized that problems of medical education on a national scale are technical problems and not political problems.

CONDLIFFE: Would anybody else like to comment now? Mr. Yu?

YU: Yes. Dr. Ellis brought up one very good point about research in teaching, when he mentioned that research and teaching are not two separate identities, but are integrated with one another, and if you lose one, you also lose the other. I fully agree with it, and I wish more of our faculty would have the same idea. But from a student viewpoint, we see research

*Report of the Inter-Departmental Committee on Medical Schools. His Majesty's Stationery Office, London, 1944.

separated from teaching. This artificial separation of research and teaching is made by the faculty and not by the students.

CONDLIFFE: Mr. Lloyd?

LLOYD: You are asking, really, what role universities should play in society, and I think that in this respect, it is very intresting that a country like ours, with almost the extreme in socialized medicine, should at the moment be playing the role of a cynic. The really important thing that comes out of this is that we have a structure, and we, as students, can see what is good and what is bad. And the interesting thing in our country at the moment is that when students ask for general-practice attachment, many of them say, "Could we please see a bad one as well as a good one, so that we can see what is going wrong? To see these things is part of our university education."

This is very much our education in social terms, if we are free to be able to see everything that is going on. Then, perhaps, when we leave the university, we are in a fit and educated state to do something about changing it.

McKEE: I should like to make one small comment. Before there was a differential in the awarding of funds for various purposes, these distinctions Mr. Yu mentioned of service, education, and research were never prominent. When I was in medical school before World War II, on rounds with a professor who was interested, say, in hematology and looking at a patient with leukemia, he was teaching students, taking care of the patient, and doing his research, and no one asked him which he was doing or to account for this percentage of time or that percentage of time. Suddenly, when there was support money, which was identified for Purpose A or Purpose B, or Purpose C, then it became important for individuals to fill out forms in which they designated 20 percent of their time for this and 40 percent of their time for that, and now we have what Mr. Yu properly calls an artificial separation.

There really is no such thing, and the only reason we have it is because we are trying to comply, to get the funds we need to do some of the things we want to do. But there is nothing pure or separate about any of these particular categories of activity.

ZELTER: Do you, in your general scheme of medical education, think of the general concept of medical schools?

ELLIS: I don't quite understand the question.

ZELTER: American schools are considered rather professional places. Now, if you are to introduce in the medical school a new type of knowledge, a new type of thought, how can it fit with the present structure of medical schools that are rather isolated from the outside world?

ELLIS: I think I understand what you mean, and I would say one of our

problems is how to turn a medical school, which was a kind of technical training place, into a university, a faculty. And how to give the university hospital the atmosphere of a university, not a hospital. This is a problem for us because we have little money to recreate the structure that is needed for this kind of function. But when there is a will, there is a way, and it is coming.

CONDLIFFE: Dr. Dumont, did you have one question?

DUMONT: Dr. Ellis, what is the proportion of the MD's coming out of the medical schools in England that are going abroad, and is it a significant proportion?

ELLIS: It is very difficult to be precise at the moment. It may be 200 or 300 a year out of 2,400, of whom 100 were born overseas anyway.

What I can tell you is that up to two years ago, the migration into the country to stay and work in medicine permanently in Britain equaled our loss. It is difficult to be precise about figures of loss each year because many people come back. You will notice the fact that we have always published our loss by emigration and never mentioned our gain by immigration. That again is exclusive of 2,000 or 3,000 overseas graduates who come every year for a short period of time. I refer to people who stay permanently in Britain, coming from the Republic of Ireland, Australia, South Africa, some from Canada. These people in toto equal the numbers we had permanently lost up to two years ago.

PFEIFFER: I was very much impressed with the clear-cut analysis given by Dr. Ellis, but I think some of these points are discussed the world over, and the significance of the general practitioner is one of them. Ours is a country in which social problems don't play much of a role, a country having social security for 75 years now, and the social security service has been extended since the last war. It is a system different from that in your country. Everybody earning less than about 12,000-15,000 marks per annum has to be in social security.

But what has been the result of that? The result has been that these people in the higher income levels are interested in being private patients of individual physicians more than they were before. So in private practice, and as a university professor, you only have patients transferred to your private practice from other doctors.

You now see secretaries, plumbers, men of the railways who have permanent jobs with the railways. They also stay as private patients in the hospital beds because they have additional insurance for staying in the hospital in a private bed. The intention to have an individual, highly qualified doctor present has gone to the lower classes, which in the past did not seek private medical advice from a physician asking a high fee.

The other point regarding the private practitioners in towns—the gen-

eral practitioners—is that people are saying more and more that they want back the general practitioner when he was lost already. There is also the tendency of a number of general practitioners to get together and form a joint practice, because of the cost of the apparatus, and because better service can be furnished. But patients, as a general trend, do want their indivual physicians, the general practitioners, as was the case in the past. And I don't think that the trend that you have outlined, that they want to be taken care of by a nurse or social worker, is following the wishes of the community and the wishes of the individuals in the community.

I was very much interested in hearing about the definition of community medicine, which I think has other names in other countries, but my feeling is that, as long as income is increasing, steadily increasing, and the well-to-do are going into the broadest classes, the tendency to have individual medical care, at least permanently for the family, for being guided afterwards to the specialties, is increasing.

ELLIS: I entirely agree. This is true in Britain, also. So is the desire to have a Rolls Royce and a personal yacht. It is highly unlikely, however, that the majority will obtain this.

There is no doubt, at the moment, that the only seriously underprivileged class of patients taking medical care are those who have private inpatient care. They pay for what they get and they take a risk. The nursing, the structure, the equipment, and everything is not so good. I am reluctant to take some of my private practice into a hospital as *private* patients because they are too ill to be accommodated in facilities less good than those that would be provided in the public sector.

But I agree with your point: There is an increasing demand for the old type of general practitioner. I would only say that in Britain this demand is not matched by an increasing demand on the part of the young doctor to perform that role.

PFEIFFER: That is right. Therefore they are talking about the specialist in general medicine.

ELLIS: Yes.

CONDLIFFE: May I exercise my prerogative and say this particular question has been suggested to us by a number of people and it obviously comes out of Professor Ellis' able summary as one for a future colloquium at the Fogarty International Center. I think if we continued with this discussion we could go on all day. I think we really must proceed.

Dr. Bosch?

Samuel Bosch

COLOMBIA: A MEANINGFUL EXAMPLE OF CHANGE IN MEDICAL EDUCATION

We have just heard a very interesting summary by Dr. Ellis of pressures on medical education and his views about the British situation as related to them. I should like to highlight what seem to me to be some of the major issues emerging in this meeting. My method will be to tell you very briefly about a real effort and action that is taking place in a Latin American country that, I believe, is looking for constructive solutions to very similar problems. I am referring to Colombia, which unfortunately is not represented in this meeting. Colombia is nowadays making a significant contribution to medical education, and I think this is in great part the result of student frustration and unrest in the mid-1940's. I am including in my definition of "students" the very young physicians who had just graduated from medical school in those years.

Before I go into the subject, I would like to tell you, through my own personal history, which is more or less representative of a Latin American medical student, how I learned about Colombia's accomplishments, and the impact it had on me. I come from Argentina. I grew up in a nice apartment in the city of Buenos Aires. Two blocks from my home there were slums. This sharp contrast became apparent very early in my life. I went to medical school there, a very typical kind of medical school. I afterwards had a sophisticated postgraduate training in rheumatology in the United States. I became a "specialist" and learned how to do "clinical research." I went back to Argentina and could not apply there almost anything of what I had learned in the United States. I there-

fore indulged in a successful private practice. I went to the public hospital in the morning (as was described yesterday as happening in Paris), and to my private practice in the afternoon. This kind of life became meaningless and brought frustrations that took me out of practice and into the field of medical education. I began to look for relevant solutions by seeking teaching models for the delivery of comprehensive health care. Because of this, in 1963 I came to initiate contact with foundations in the United States.

In Argentina we are very isolated but with a European tradition. We therefore thought that we could only learn from Europe or the United States. We were then offered by one of the foundations a grant to travel through Latin America and learn about what was going on there in medical education. We thought of this as a strange offer. It was then that we learned that in these matters we were far behind many countries in Latin America, and there that we were first impressed by what was going on in Colombia.

Now I would like to go back to some of the problems that we have been discussing during the last three days:

One is the gap between knowledge and application of knowledge.

Next is the three-legged stool, with care, teaching, and research as the legs, with the research leg hypertrophied in relation to the others.

Another is the problem of the doctor and his attitude of isolation from society.

Yesterday we were also shown a slide of *le grand patron* representing professorial autocracy.

We have spoken about the university as an ivory tower and of its lack of contact with the community and with government.

These are just some of the problems that we have been interpreting concerning medical students' unrest, all of them closely related to the broader issue so clearly described by Dr. Ellis about the rapid changes that are taking place in society.

What is Colombia accomplishing? Just to give you a quick idea of the situation there, 20 years ago psychiatric patients in Cali were still kept under chains. Medical schools were overcrowded and there was little or no contact with what was happening in the community. It was the typical ivory tower in a country with many

social needs. There was also, of course, very poor communication between teachers and students.

After World War II, a few young physicians who had just graduated from medical school began to come to the United States for postgraduate training. Their exposure to different methods of medical education and research brought them new expectations and frustrations similar to those I told you that I had experienced. It took them along the path of finding other ways to produce "the kind of physician that the country really needs."

A small group of these young people got together and started a new medical school in a garage. This happened in Universidad del Valle, Cali, Colombia. We visited that school in 1963, about 16 or 17 years after it had opened.[1] We witnessed an educational institution that was in close contact with what was happening in the community, with excellent interdepartmental coordination and a very imaginative activity outside the hospital walls. We met a large group of young people strongly motivated toward finding ways to establish closer contact between the university and the community. This fact became even more impressive when we saw similar efforts in Bogota and Medellin. In further visits, we learned about the activities and accomplishments of the Colombian Association of Medical Schools. We very soon realized that this was not an isolated phenomenon, but really the results of the coordinated action of a group of 30, 40, or maybe more persons who, because of their frustrations in the 1940's, had managed to organize significant demonstration and training programs and had in this way began to influence what was happening in their country.

Probably one of the most impressive accomplishments in the Colombian situation has been the role and impetus given to the Colombian Assication of Medical Schools and how this organization has been used as a mechanism for establishing effective contact between the university, government, and the community.

Just as an example, one very practical and effective result today at work in Colombia is an active university-oriented Minister of Health, deeply committed to society and to the development of a meaningful kind of medical education. Many other university officials have also been called to action. They had previously been providing facts that are now useful and demon-

strative for politicians. It is not the university in government, but the university providing the human resources and the data useful for government decisions.

A very interesting accomplishment is the recent *Study on Health, Manpower, and Medical Education,* produced in coordination with the Pan American Health Organization.[2] This is a study of health level, human resources, institutional resources, and socioeconomic factors for all of Colombia. This diagnosis of the health situation in the country is now a basis for planning. One of the very interesting features about this study was the active participation of students in its implementation, which was visualized as a way of getting them deeply involved in understanding the realities and needs of their country.

I believe the medical schools in that country have developed in this manner a very strong interest in the understanding of their basic national problems. They are probably showing us one of the ways of dealing with some of the questions students are asking: how to bring change through evolution and not through revolution. A history like this is one of the reasons why I cannot agree too much with Mr. Yu when he is impatient for quick change. I belong to the group of persons who think that change comes slowly, and as a result of different pressures; and further that it is very important to devote ourselves to a continuous effort to promote that change through education and meaningful action. Also, I believe that if we are too precipitous, there is a danger of walking backward and delaying the desirable change.

As you can imagine, I became very stimulated when I learned about Colombia's approach to change. It is, I believe, a very pertinent model for the kind of subjects that we have been talking about here. I see the Colombian evolution as a very encouraging developmental history of medical education, especially stimulating for other Latin American countries.

During the last 10 years, one of the main policies implemented in Cali in relation to postgraduate training abroad, is that each of their trainees is requested to devote at least 20 percent of his time to problems of medical education. A few professionals are getting specifically involved in the science of medical education as a way of shaping future action. Such individuals are now in an advan-

tageous situation to define educational objectives related to their social needs, prepare suitable programs, and design efficient tools to evaluate their future accomplishments.

I think this joint effort of several generations of professionals, those from the 1940's to the 1960's, is providing the opportunity for all parties interested to be involved in the definitions of objectives. By all parties I mean providers and consumers of teaching, providers and consumers of health care, teachers, students, physicians in the community, and members of the community themselves.

I have not given details about the model and only brought to you the message of my personal experience. I have tried to stress that the natural course for Latin American physicians has been to come to the United States in search of solutions. What the United States really offers is scientific and technical training of the highest order. However, for models of the organization of education that seem most promising to provide the kind of physicians who can serve the actual needs of the countries, the Colombian experience proved to be for me more relevant. I suppose it can be translated into even more international terms as a message that emphasizes the importance of a more "learner-centered" education. I think that one of our main problems is that we insistently fall into that verb "to teach," assuming a very distant autocratic position with our students. We should be defining educational objectives with them.[3] It would then be much easier to design meaningful learning experiences and to accomplish desired goals.

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DISCUSSION

Peter G. Condliffe, presiding

CONDLIFFE: If there are questions that people would like to address to Dr. Bosch for ten minutes or so, why don't we proceed with a brief discussion? Who would care to address himself to Dr. Bosch's summary?

ESCOFFIER-LAMBIOTTE: Dr. Bosch, you said that in Colombia, if I understood well, there was some sort of inquiry going on about the community need for medical care and that the students were working on that. Did you mean the medical students?

BOSCH: Yes.

ESCOFFIER-LAMBIOTTE: Not the other students?

BOSCH: No. The Colombian Association of Medical Schools, together with the Ministry of Public Health of Colombia and the Pan American Health Organization performed the study in that country. Medical students actively participated in the study. This was made possible through the Colombian Association of Medical Schools. It resulted in the collection of very important data for Colombia and simultaneously a realistic educational experience for medical students.

ESCOFFIER LAMBIOTTE: And who provided the funds for that research?

BOSCH: The funds were provided by Colombia, the Pan American Health Organization, and the Milbank Memorial Fund.

CONDLIFFE: Dr. Chiappo?

CHIAPPO: I would like to ask Dr. Bosch if he shares the point of view of Dr. Ellis about the role of the university? You know the Latin American background, and I am going to ask if it works in the Latin American background. I agree theoretically that authority and responsibility are the role of the government, and it is possible the university has not the responsibility and the university is not to take the place of the government. This is true.

In Latin American countries, the universities have really pretended just the opposite of what you said, and there are students, extremist students, who believe that the university is sort of another government, making decisions. But why did it happen there—because they were extremist or because the most progressive people are blind about the future of the government and the limits between the university and the government? No, because the governments in Latin American countries do not represent the whole society. The democratic governments or nondemocratic governments, the juntas, or something like that, don't represent the whole country because there is a large part of the population that doesn't vote. And in the system of parliament, the representatives to

the parliament don't really represent the regions, but represent the local powers, the landowners, and so on.

The decisions of government are not always in relation to the needs of the nation. And then somebody is going to play the role of making pressures.

The information required for a formal decision by the government is very good: I believe this is the role of the university in relation to society at this point. But information is not enough: first, because of the interests that represent the government; second, because the governments sometimes don't care about information; third, the prestige of the universities is not good enough for them to take the information seriously; fourth, the universities don't produce the technical information at all—with some exceptions, it is true.

And then, the role of the universities in these countries is a matter of question. If it is to be limited, as you said, and you share the opinion, Dr. Bosch, then it is the extreme or opposite side to take the place of the government; it is ridiculous. But I would like to hear from Dr. Bosch some middle point between that position and the position of Dr. Ellis. I share Dr. Ellis's position theoretically; it is very good, but maybe in our background it doesn't function. The other is really impossible.

Then, what solution is there in this background?

CONDLIFFE: Dr. Bosch?

BOSCH: This is the very reason why I decided to bring to this closing session this brief report of what has happened in Colombia. I think it is a very good example in Latin America of how to achieve changes through evolution and not revolution.

This is why I gave the example of the present Minister of Health. He is now in government, after a period of 14 or 15 years in the university. He represents the university approach. It is now university people with a different hat who are trying to implement change.

This is why I thought it was of interest to describe something that has really been achieved without violence. I think violence always involves the great danger of going backward.

CHIAPPO: I would like to add another example. The interest of the community and community medicine arises in my university, a private university, from the students. They start to organize groups to go to the field and to go to the Andean communities in Cuzco and to study about the conditions—parasitology, and nutrition, and so on. Then this nucleus of students, doing this kind of work, makes the policy of the institution now. We are located just in the middle of these lands to do this kind of work. But this is very interesting. The report that the stu-

dents, with the professors, made in six months of research—two summers—was written down. Then in the health area of Cuzco, the Ministry of Public Health took an account for the decision of where to make changes in water supply, a policy for parasitology, and so on, and took action. This was something basic that arose from the students' unrest, in this case constructive unrest.

BOSCH: Let me extend it a little further. I jumped from what was going on in the Universidad del Valle into what was being done nationally through medical schools. I think the value of a community medicine program, like the one in the Universidad del Valle, is not so much what it is doing for the rural town of Candelaria, but its educational consequences. It is producing new professionals who will eventually be in leading positions. From positions in government, they will be able to produce further changes.

CHIAPPO: But this kind of action is very hard. What I want to say is this: An American company, for instance, or a foreign company, is going to exploit mines or oil in Peru or Argentina or wherever in Latin America. Before the agreement, it is possible that if a university made a study of the conditions of the agreement and saw that the conditions were not for the best interests of the country, and then made a technical report and sent it to the government, showing that it is not convenient technically or socially for the country to make this agreement, because the company is going to take the share of the lion, or something like that—then the role of the university in these cases is to show society, and to criticize what is going to happen. A technical report—if the government asks for a technical report—would be good, but they never ask for technical reports. The universities did not always make technical reports but made a decision to achieve something in a positive and constructive role.

This pressure role of the university we need in the Latin American countries, I think. I don't know that it should be that way in England.

ELLIS: Yes, I think so.

CONDLIFFE: Why don't we go on to Mr. Lloyd?

Geoffrey Lloyd

SUMMARY OF STUDENT VIEWS

Since I have been placed in the position of teacher, I would like to offer all you students the prerogative and right that every student possesses, that is, to walk out of the lecture if you don't think you are going to enjoy it. Some of our students do leave lectures and a good many of our students never attend them, and I think that is a very healthy sign.

I have been asked to give some factual information and some practical details of change that students would like to see. I will try to do this, but you must permit me the prerogative of talking to a certain extent in some idealistic terms, because one of the reasons why students here appear to have been a little reticent in giving hard facts concerning needs for change is that these tend to be national and parochial issues, and are not important issues as they see them. New curricula abound. No good school can be without one. But these revisions are quantitative and the real problems are qualitative. The current crisis demands principally not curriculum manipulation but a change in educational environment.

Environment is a greater determinant of what is learned than curriculum, and as Albert Einstein said, "It is nothing short of a miracle that modern methods of instruction have not entirely strangled the holy curiosity of inquiry."

Therefore, we produce definite ideas for change, but it must be emphasized that the good teacher and the good environment are the truly vital factors.

Concerning environment, a common thread in our thought is

that the curriculum and evaluation procedures should be considerably relaxed. I have said that British students have a tendency to ignore and not attend that teaching which they do not like, and this behavior should be viewed not as Anglo-Saxon eccentricity but as the right of any university student. There should be a great deal of free time in every medical course, time in which the student may do as he wishes and may receive guidance if he requires it. This relies upon the maturity of students to utilize this time in evaluation of medical problems that interest them. This is Dr. Ellis' *study in depth,* which really is the most important educational process.

We believe most students will rise to this call for personal responsibility, and those that do not will either respond to encouragement or must be rejected as unsuitable for the profession.

By "a great deal of free time," we are talking in terms of many months. And this period of enforced personal endeavor, we think, is a most valuable educational process. Curriculum, as we have all tried to emphasize, is not the central problem or terribly important. But certain common ideas for change were apparent. First, there is a desire for more sociology and family and preventive medicine. Second, it was suggested that a multichanneled curriculum might be better suited to needs. This is a curriculum in which students are enabled to select a course that satisfies their interests, requirements, and future aspirations.

The Czechoslovakian curriculum is quite an interesting one. It contains a lot of philosophy and Marxism which one would consider to be unnecessary, but it does consist of a basic science course for two years, followed by one of four distinct courses leading to graduation in medicine and surgery, dentistry, hygiene and epidemiology, or general medicine and pediatrics.

This four-channeled course might be regarded as rather rigid, but the possibility should exist for a student who has chosen his calling to undertake courses with that in mind. The key word here is *flexibility.* A student should be able to do what he thinks he will need for his future career.

Our Commission recommended a model system that could serve this function, but the method matters not so long as the opportunity is provided.

The structure and organization of education, as might be expected in our discussions with the other students, gave rise to

differing views. The French are thinking along the lines of integrating the medical school into the general university, with students of all faculties mingling to study those subjects that are common to their degrees. Thus, chemists and medical students should be taught chemistry together. Basically, they would prefer a medical faculty of a university to a separate medical school.

This is the situation that exists outside London in the United Kingdom to some extent, and it certainly has many advantages of university life and a mutually stimulated student community. But it has given rise to bitter criticism. The medical students complain that, when combined with other faculty students, too much of the time is spent on matters irrelevant to medicine. And to satisfy the needs of a medical course, you require something which is rather specific to medicine. And therefore, they advocate a separate medical course. Possibly, in the very early days of the medical course, perhaps at the most in the first year, the science and medical faculties could be combined.

I mentioned the word *irrelevant,* and I know that relevancy and irrelevancy is something of a problem, so I would like to say that by a relevant subject we mean a subject of which some understanding, however superficial, can reasonably be expected of a doctor.

We did discuss the problem of selection. The need for change of the French system to one of selection rather than the present rejection method was agreed, but the real solution proved elusive. The need for selection, as such, was agreed and it was also agreed that candidates from all educational backgrounds should be considered.

It was felt that probably, at present, selection should be on academic achievements in whatever subject the candidate offered. It was also suggested that unsuccessful applicants might be channeled into other disciplines such as hygiene, dentistry, and public health, but this does raise the problems of making those particular disciplines appear to be second-rate to medicine and, for that reason, I think it will never take place in Britain.

On the subject of assessment, there was diversity of view. The French feel all types of examination methods, essay or multiple-choice questionnaire, should be used, but Britain and Canada—I am using countries here, if that is all right—place more emphasis on the multiple-choice question and its development, and consider

the other forms of examination as more a learning experience than a valid means of assessment. But we all agreed that continuous assessment in the form of teacher or tutor reports was a very valuable method.

Canada favored a pass-or-fail system in their examination system for the reasons given yesterday—and I won't go over them all again. I can give the view of British students in this matter. We do not, in general, think in this way. It is valuable to know the quality of one's own performance, and therefore, marks are useful. The important thing is that they be regarded as simply a personal indicator of performance by both student and teacher. We know very well, and would wish our teachers to believe similarly, that marks are not the complete representation of ability, and that learning and personal endeavor in diversions of the subject are more important than chasing marks in a limited examination. Nevertheless, they are valuable to the student in correlating his struggle with his success. Therefore, I would wish to see many voluntary, small examinations of multiple-choice question papers available throughout the course, with the resulting marks given to permit students to evaluate their own progress. On this point we agree, I think, to differ.

We do, however, agree on the basic pattern of health care as we would wish to see it, and this is important in view of future education. We would welcome the institution of a system, which I think is known to many of you, in which you have a central hospital complex, surrounded by health clinics of a size sufficient to accommodate at least radiographic facilities and things of this nature and, scattered among the population, the individual doctors. The progress of any patient is seen as coming from doctor to health clinic, possibly back again, or possibly from health clinic to hospital, and back to health clinic. This is a structure that is developing in our country at the moment, and I was rather interested to see that my colleagues agreed upon this structure as the basis of future medical practice.

This being so, we train a student not only in a hospital, but in the clinic and out of the community as well. In this respect, I was interested to hear the South Americans so strongly advocating rural internships. They wish to see medicine as it is practiced outside the hospital, and I think this is going to be a very important aspect of future medical education.

We also all agree that administration is an important part of a curriculum. There should always be part of the curriculum that deals with the administration and distribution of health care. In the future, doctors are going to have to assume more and more responsibility for the distribution of health care as well as individual patient care.

This point has been made by Dr. Ellis earlier, but we cannot emphasize it enough. What we term community medicine—the organization and distribution of health care—is going to be a vital part of future medical practice.

We can only give very basic themes for change, for details are more relevant at national and parochial levels. I can give several recommendations for immediate change in England, such as abolishing the final examinations and replacing them with review and continuous assessment, liberalization of the entry requirements, more time for individual projects, an increase of interdisciplinary teaching, mandatory general practice for all students, more use of peripheral hospitals—and I could go on. Some may apply to another country, some may not. And even then, they only solve the short-term problems and leave the basic ones untouched.

What changes we have tried to emphasize are a more flexible curriculum, a more liberal entrance, continuous assessment and reduction of examination hurdles, and a free atmosphere with abandonment of rigid rules of attendance and encouragement of student initiative to do something new or different.

And, finally, on this point, I would point out that it is this free atmosphere, this freedom from incarceration by the university walls, that is so important and that is what most students are striving for at the moment.

Dr. Bosch emphasized that we must think of the objectives of education, and we would like to add our emphasis to this. Let us see the faults and the needs in society and in terms of medical care particularly, and then, having assimilated these, we are a good way to being truly educated. Students are not battering the university walls from the outside. They are hammering on the inside.

CONDLIFFE: Unless there are other suggestions from the floor, I think that we should give the ex-chairman the floor now and let him have his chance.

Julius R. Krevans

SUMMARY OF THE COLLOQUIUM

I asked, as my pay for sitting in the Chairman's seat for two days, the opportunity to close the argument.

There are a number of different ways one can do this. I will not subject you to a rehash of everything that we have gone through, pointing out what other people have already said, because you have already heard these things.

One question that I asked myself is: What have we learned from these two days? It turns out that most of the things we learned we already knew, a fact that is not too surprising.

We knew and we learned that student unrest is genuine and is widespread, that it extends into the medical schools, and we have been promised that it will soon extend into the postdoctoral period (the assistants, as Dr. Pfeiffer calls them).

We knew and we learned that in each setting, there are certain unique circumstances and pressures leading to the student unrest, but that common to all were those factors outlined so well by Dr. Ellis this morning. The students' conclusion is that their institutions are failing them and are failing society.

We knew and we learned that student unrest has already achieved certain changes (I will stay away from the word *reform* because it upsets certain people) and is certainly accelerating the pace of this change.

While I think there is genuine agreement that some changes are desirable and necessary, there still remain some important differences of opinion as to what needs to be changed, and as to how medical education should alter itself to accomplish these changes.

I have some personal concerns, some of which I have expressed earlier and some of which I shall express now.

I am concerned lest the university become so responsive to society that it loses its ability to make its unique contribution. I think that university commitment to community medicine, desirable as it is, represents that kind of response that is a challenge to the university and, at the same time, a threat. When it considers taking on a community medicine project, a university must ask itself these two questions: (1) If it takes on this sort of societal need, will it so alter itself that it will be unable to examine other questions that are also its proper responsibility? and (2) Can the university do it? (The question as to whether or not it is desirable is really not an important issue, because it is desirable and it is a proper function, if the university chooses it.)

If the university takes on the responsibility for a community medicine program without question, it is no different from a doctor taking on the responsibility for an individual patient without asking himself, "Do I have the skill? Do I have the resources to care for this particular illness?"

Where a university lacks these skills and lacks these resources, it does a disservice to its community by taking on the responsibility of delivering health care to that community, because it relieves society in general of the presence of an unresolved problem and substitutes an inadequate solution to the problem.

I am concerned with the term *relevance.* The pressure to make basic science relevant may well emasculate basic science, and convert medical schools into trade schools. If one defines relevance broadly enough, I am unconcerned. But when one defines relevance as that part of basic science for which one sees an immediate application and confines basic science teaching to this definition, the future physician, whom we all paint as a continuing student, will not have learned to examine and question the unknown. In a sense, the system would guarantee permanent mediocrity. It is the irrelevant part of basic science that is the most exciting and, potentially, the most useful.

Achieving the right mix between how much basic science to teach—because obviously one cannot teach it all—and how much to omit is one of the most difficult problems facing medical educators today. I think the solution is *not* to look for a trun-

cated, comprehensive basic science course, but to select areas of basic science and to examine them in depth. This provides intellectual satisfaction to both student and instructor.

I am very concerned about hiring "teaching teachers." If a professor is *only* a teacher and not involved in creative work, not involved with examining new problems, then from the beginning he is backward, and for the rest of his life he teaches only those things somebody else has taught him. Even worse, he is imposing the same mediocre approach on his student, because all the student will learn from such a teacher is what is known. He should not be learning what is known; he can read that in a book. What he should be learning from his teacher is what is not known.

In a very real sense every general practitioner, any physician of any kind who has contact with a patient, is performing a scientific experiment. Thus, he must learn the basic language and approach of science. Each patient is an unknown. Each patient demands the same approach that any scientific problem demands, plus very necessary human qualities because the patient is a human being. The late H. L. Mencken, the sage of Baltimore, wrote that the good old family practitioner was the kind of fellow who had a cup of coffee with you in the kitchen while your child's appendix burst in the bedroom. One cannot ignore learning what is known and scientific about medicine.

I am concerned, as I expressed earlier, that in our great desire to achieve this balanced three-legged stool—patient care, teaching, and research—it will be so well balanced that it will not move. I think a certain amount of imbalance is healthy. I see nothing wrong with some medical universities being more concerned with patient care and others more concerned with research, so long as they all have a common concern for producing a high-quality product. Because when a university does mediocre care or mediocre research or mediocre anything, it damages the students who attend.

The faculties and administrations of medical schools owe the students a great debt. By their nature, faculties and universities are really not innovators. I think Professor Querido was right in saying this when he told us what the long-term role of the university must be. The universities need prodding; they need chal-

lenge. And this prodding and challenge come both from the students and from the environment in which the university exists. Their contribution is, as Professor Querido pointed out, the careful analysis and criticism of society's problems.

They are very good critics of society. They have the talent and resources to examine problems that are brought to their attention. They can provide the very genuine and lasting progress that comes from a critical and careful and free analysis of the problem. This is their unique responsibility to society, not only to respond to a specific problem, but to retain the kind of environment that Mr. Lloyd described, which allows the universities the freedom to examine, which enables them to choose, to concentrate on one problem that requires this kind of effort and, therefore, keeping this independence of thought, they are of service to society, not just with some current problem, but with problems that at this point we cannot anticipate.

We have discussed at other meetings: "What is the difference between a teaching hospital and a nonteaching hospital?" I submit that it is not that the nonteaching hospital is concerned about the patient who is in the hospital and the teaching hospital is not concerned about that patient. The difference is that the teaching hospital is concerned about the patient who is in the hospital today, but is also concerned and has a responsibility for the patient who will be in the hospital next year and 10 years from now.

I think that this same distinction has to be preserved between the university and other social agencies that are concerned with society's problems; that the universities cannot absolve themselves of concern for the problems of society today, but they have a responsibility to society to preserve what is unique about them so that they can be concerned about the problems of society tomorrow.

I have no magic solutions to the curriculum revision, either. I share with Mr. Lloyd the absolute conviction that the form of the curriculum—providing it, in and of itself, is not destructive—is less important than the contact between the various members of the university, namely the students and the faculty.

That really is all I have to say, Dr. Condliffe. I would like to take this opportunity to thank Dr. Condliffe and his staff, who have done so much for all of us to make this conference a pleas-

ant and very rewarding experience; to thank the Fogarty International Center and the Board on Medicine of the National Academy of Sciences; but most of all, to thank the people who have given so generously of their time to participate in this conference.

Thank you.

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